Comprehensive Guide for First Aid & CPR

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Land Acknowledgement

The Canadian Red Cross acknowledges the Indigenous Peoples, the traditional stewards of the land now known as Canada. The Indigenous Peoples, including First Nations, Métis, and Inuit Peoples, have been caretakers of this land since time immemorial. As an organization committed to reconciliation, we give thanks for the deep learnings and understanding this relationship entails. We endeavour to be guided by this learning as we walk alongside Indigenous Peoples and communities.

Cultural and Safety Statement

Everyone who seeks to learn from the Canadian Red Cross deserves respect and dignity. As providers of first aid knowledge, we warmly invite all Canadians into our classrooms or online learning environments.

At the CRC, learners can rest assured that they have come to a safe place to grow as confident First Aiders—who are ready and willing to step in when needed most.

Anyone is welcome to learn and to provide first aid. We can all help a child who is choking; a grandparent who has fallen; or someone who is suffering from an opioid poisoning or heart attack—whether we know them or not.

A friendly learning environment can impact many lives and opens the door to saving even more. As demonstrated in our Fundamental Principles, the CRC is committed to equity, diversity, and belonging for all individuals.

As part of the largest humanitarian network in the world, the International Red Cross and Red Crescent Movement, we're here to save lives. We believe that begins in a welcoming space for all.

The Fundamental Principles of the International Red Cross and Red Crescent Movement

Humanity

The International Red Cross and Red Crescent Movement, born of a desire to bring assistance without discrimination to the wounded on the battlefield, endeavours in its international and national capacities to prevent and alleviate human suffering wherever it may be found. Its purpose is to protect life and health and ensure respect for the human being. It promotes mutual understanding, friendship, co-operation, and lasting peace amongst all peoples.

Impartiality

It makes no discrimination as to nationality, race, religious beliefs, class, or political opinions. It endeavours to relieve the suffering of individuals, being guided solely by their needs, and to give priority to the most urgent cases of distress.

Neutrality

In order to continue to enjoy the confidence of all, the Movement may not take sides in hostilities or engage at any time in controversies of a political, racial, religious, or ideological nature.

Independence

The Movement is independent. The National Societies, while auxiliaries in the humanitarian services of their governments and subject to the laws of their respective countries, must always maintain their autonomy so that they may be able at all times to act in accordance with the principles of the Movement.

Voluntary Service

It is a voluntary relief movement not prompted in any manner by desire for gain.

Unity

There can be only one Red Cross or one Red Crescent Society in any one country. It must be open to all. It must carry on its humanitarian work throughout its territory.

Universality

The International Red Cross and Red Crescent Movement, in which all Societies have equal status and share equal responsibilities and duties in helping each other, is worldwide.

The Fundamental Principles were proclaimed by the XXth International Conference of the Red Cross, Vienna, 1965. This is the revised text contained in the Statutes of the International Red Cross and the Red Crescent Movement, adopted by the XXVth International Conference of the Red Cross, Geneva, 1986.

In keeping with the Fundamental Principles of the Red Cross, the Society is committed to Social Justice in the elimination of Society structures and actions that oppress, exclude, limit, or discriminate on the basis of race, gender, ethnicity, financial ability, sexual orientation, religion, disability, or age.

1

The Red Cross

Our History

In June of 1859, Henry Dunant saw an unforgettable scene: 40,000 dead and wounded soldiers left on the field after the Battle of Solferino in Italy. Dunant organized local villagers into first aid teams to help as many of the wounded as possible, saving thousands of lives.

To prevent this horror from happening again, Dunant decided to create a neutral organization to care for wounded soldiers and prisoners—an organization that would be respected and protected by both sides in any conflict. The result was the Red Cross. Dunant spent the rest of his life trying to reduce the suffering caused by war. He lobbied governments, organized Red Cross Societies in different countries, and spoke to the public.

In the spring of 1885, during the Northwest Resistance, Dr. George Sterling Ryerson stitched a Red Cross made of cotton onto white material and used this as a flag to distinguish the horse drawn wagon being used to transport the wounded. This was one of the first Red Cross flags ever flown in Canada.

In 1896, Dr. Ryerson founded the first overseas branch of the British Red Cross, which later became the Canadian Red Cross.

In 1901, Dunant won the first Nobel Peace Prize. By founding what is now the International Red Cross and Red Crescent Movement, he has saved the lives of millions of people.

On May 19, 1909, *The Canadian Red Cross Society Act* was approved by Parliament, and decreed that the Canadian Red Cross would serve as an auxiliary to the Government of Canada for Canadians, which was a measure that was in accordance with the Geneva Conventions. (Prior to 1909, the Canadian Red Cross operated as a branch of the British Red Cross.) As a result, for more than a century, Canadians have had their own national Red Cross Society dedicated to improving the situations of the most vulnerable people in Canada and around the world.

Today, there are Red Cross or Red Crescent Societies in more than 190 countries, all dedicated to the same ideals and fundamental principles.

The Fundamental Principles

In every country, our programs and activities are guided by seven Fundamental Principles. The Tanzanian Red Cross has created a short, simple version of these principles:

Humanity: We serve people, but not systems.

Impartiality: We care for the victims and the aggressors alike.

Neutrality: We take initiatives, but never take sides.

Independence: We bow to needs, but not rulers.

Voluntary Service: We work around the clock, but never for personal gain.

Unity: We have many talents, but a single idea.

Universality: We respect nations, but our work knows no bounds.

Essentially, we provide help to people in need, whatever their race, gender, culture, ethnicity, financial ability, sexual orientation, religion, disability, or age.

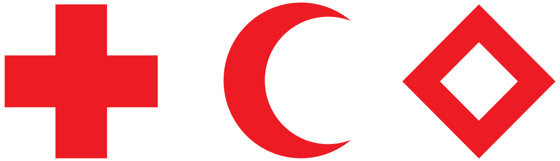
Red Cross Symbols

The International Red Cross and Red Crescent Movement has three official symbols: the Red Cross, Red Crescent, and Red Crystal.

All three symbols are equivalent and share the same status under international law. Each national society of the International Red Cross and Red Crescent Movement chooses one of these three symbols to use in their country.

The three emblems are used to identify military medical services as well as the people, programs, and objects connected with the activities of the International Red Cross and Red Crescent Movement.

Recognized as a symbol of humanity and neutrality, the emblem is the only protection Red Cross workers have when they bring relief and protection to victims of armed conflicts. The emblem identifies and protects the sick, the wounded and those who come to their aid, and medical equipment, buildings, and vehicles.



The Red Cross

The Red Cross symbol—five red, equal-sized squares forming a cross resting on a white background—was adopted in 1863 at the first International Conference of what would one day be the Red Cross and Red Crescent Society. Today it is one of the most recognized emblems in the world, and continues to be an internationally respected symbol of protection and neutrality.

The Red Cross is the emblem that is used by the Canadian National Society. No organization—except the Canadian Red Cross and the medical services of the armed forces—has the right to use the Red Cross emblem in Canada. The Red Cross emblem must be readily recognized and respected around the world as a trusted symbol of protection and humanitarian aid. Its use is legislated by the Geneva Conventions Act, the Trade Marks Act, and the Canadian Red Cross Society Act.

The Red Crescent

Although the Red Cross emblem has no religious, political, or cultural associations, it was sometimes believed to be related to the Christian cross, and this association was problematic in certain regions and conflicts. In 1929, the International Federation of the Red Cross agreed to the adoption of an additional, equivalent emblem: The Red Crescent. This emblem could be used by any national society in place of the Red Cross.

The Red Crystal

In December of 2005, the International Red Cross and Red Crescent Movement welcomed the decision to create an additional emblem alongside the Red Cross and Red Crescent: the Red Crystal.

Who We Are

Our Mission

We help people and communities in Canada and around the world in times of need and support them in strengthening their resilience.

Our Values

Our actions and decisions will be based upon:

- Humanitarian values, as expressed in our Fundamental Principles
- Respect, dignity, and inclusiveness
- Integrity, accountability, effectiveness, transparency, and adaptability
- Quality and safety

Our Volunteers

We rely on volunteers from all walks of life who bring different skills and experience to the Canadian Red Cross. You can make a big difference in your community by volunteering. Red Cross volunteers do many different things, including:

- Helping during emergencies and disasters
- Sitting on committees and project teams
- Providing customer services and office support

!

Visit the Canadian Red Cross website to:

- Learn about how the Canadian Red Cross is helping in your community, across Canada, and around the world.
- Explore volunteer opportunities for you to get involved.

2

Responding to Emergencies

Preparing to Respond

Make sure you have easy access to items that will help you respond to an emergency. Keep a first aid kit in your home and vehicle, and ensure that you know the location of the first aid kit and automated external defibrillator (AED) in your workplace. Download the Canadian Red Cross First Aid App to your mobile device so that you always have a first aid reference readily available.

You can purchase first aid kits and supplies from the Canadian Red Cross online store (products.redcross.ca), a drug store, or a medical supplies store. Whether you buy a first aid kit or assemble one yourself, make sure it has all of the items you may need. Perform regular maintenance and safety checks on all first aid kits and equipment. Remove or replace any items that are broken, expired, discoloured, or contaminated (e.g., a sterile tool in a torn package). You should also decontaminate any reusable equipment that has been used (e.g., a stretcher).

! All workplace first aid kits must meet provincial/territorial legislation and occupational health and safety guidelines. See the Canadian Red Cross website for more details.

First aid kits should include at least the following supplies:

- Emergency telephone numbers for EMS/9-1-1, the national poison number (1-844-POISON-X) your local poison centre, and your personal doctor(s)
- Home and office phone numbers for family members, friends, or neighbours who can help in an emergency
- Sterile gauze pads (dressings) in small and large squares to place over wounds
- Adhesive tape
- Roller and triangular bandages to hold dressings in place or make slings
- Adhesive bandages in assorted sizes
- Scissors
- Tweezers
- Safety pins
- Cold packs or instant ice packs
- Disposable non-latex gloves, such as surgical or examination gloves
- Flashlight, with extra batteries in a separate bag
- Antiseptic wipes or soap
- Pencil and pad
- Emergency blanket
- Eye patches
- Thermometer
- Barrier devices, such as a pocket mask or face shield
- Canadian Red Cross first aid guide

Preparing For Emergencies at Home

To be ready for an emergency at home:

- Keep important information about yourself and your family in a handy place. Include your address, everyone's date of birth, health card numbers, medical conditions, allergies, and prescriptions and dosages. List the names and phone numbers of your doctors.
- Post the numbers for the police, fire department, emergency medical services (EMS), and poison centre near every phone in your home and save these numbers in your mobile phone's contacts list.
- Teach children how to call for help.
- Install smoke and carbon monoxide detectors. Test them regularly.
- Keep first aid kits handy in your home and car. Make sure everyone in the family knows where they are and what is in them.
- Review and practise the first aid skills that you learn so that you will have the confidence and knowledge to respond in an emergency.

Most communities are served by the emergency telephone number 9-1-1. If your community does not operate on a 9-1-1 system, search online or in your local phone directory for the numbers of the police department, fire department, and EMS system. Also include the number for your provincial or territorial poison centre's hotline on your list. Teach everyone in your home how and when to use these numbers.

Take steps to make it easier for EMS personnel and others to help you, should an emergency occur:

- Make sure your house or apartment number is large, easy to read, and well-lit at all times. Numerals (e.g., "87") are easier to see and read than words (e.g., "eighty-seven").
- Keep relevant medical information, such as a list of the medications that each family member takes, in an accessible place at home and when you go out (e.g., on the refrigerator door and in your wallet or mobile phone).

Mobile phones and other electronic devices can display emergency contacts. The letters "ICE" (for "In Case of Emergency") may appear in the phone's contacts list next to the name of a doctor, spouse, or other important contact. Assigning "ICE" to a contact allows emergency personnel to reach someone who knows important facts about the ill or injured person. If the mobile phone has been programmed to include the ICE contact with a "0" in front, it will appear as the first contact in the person's list.

If you have a chronic medical condition such as diabetes, epilepsy, or allergies, consider wearing a medical identification product to alert EMS personnel of your condition in case you are unable to do so. There are also applications you can use to create digital identification tags in your mobile phone. These tags can be viewed even when your phone is locked, and so can provide important information in an emergency (such as your medical conditions, blood type, and emergency contact details).

In a life-threatening emergency, every second counts. By preparing for emergencies, you can help ensure that care begins as soon as possible—for yourself, a family member, a co-worker, or a member of your community.

Signs of an Emergency

Unusual Sounds

- Screaming, moaning, shouting, or calls for help
- Sudden loud noises such as breaking glass, clashing metal, or screeching tires
- A change in the sound made by machinery or equipment
- An unusual silence

Unusual Sights

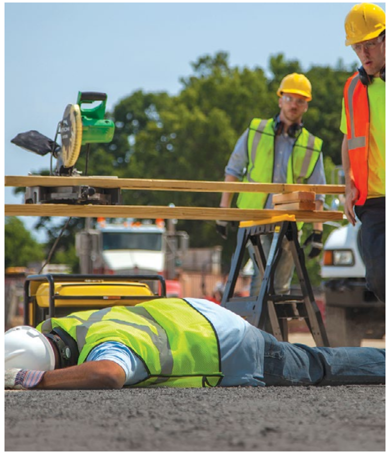
- A stopped vehicle on the roadside or a car that has run off of the road
- Downed electrical wires
- Sparks, smoke, or fire
- A person who suddenly collapses or is lying motionless
- Signs or symptoms of illness or injury, such as profuse sweating for no apparent reason or an uncharacteristic skin colour

Unusual Odours

- A foul or unusually strong chemical odour
- The smell of smoke
- The smell of gas
- An unrecognizable odour
- An inappropriate odour (e.g., a sickly-sweet odour on a person's breath)

Unusual Behaviours

- Confusion in a person who is normally alert
- Unusual drowsiness
- Personality or mood changes (e.g., agitation in a person who is normally calm)



Recognizing that an Emergency Exists

It will sometimes be obvious that an emergency exists. For example, a scream or cry for help, an unpleasant or unusual odour, or the sight of someone bleeding severely or lying motionless on the ground are all clear indications that immediate action is needed. But other times, the signs of an emergency may be more subtle, such as a slight change in a person's normal appearance or behaviour, or an unusual silence.

Willingness to Act

Sometimes people don't want to get involved in an emergency. Common reasons are:

1. **The Bystander Effect:** If there are other people at the scene, it is easy to think that they can take care of the emergency without your help. However, you should never assume that someone has taken action and is providing first aid just because you see a lot of people. Remember that there are many important jobs that you can do. You can help control the crowd, direct the actions of bystanders, call EMS/9-1-1, get supplies, or provide care to the ill or injured person. If you are unsure of what to do, ask others at the scene how you can help.
2. **Unpleasant injuries or illnesses:** Some people may feel faint, upset, or nauseated when they see blood, vomit, or visible injuries. If this happens to you, close your eyes or turn away for a moment and take a few deep breaths to calm yourself before you deal with the situation. If you are still unable to give care, you can volunteer to help in other ways, such as by calling EMS/9-1-1 and bringing necessary equipment and supplies to the scene.
3. **Catching a disease:** You might be concerned that performing first aid will put you at risk of infection, but there are many ways to reduce this risk. If you take simple precautions to limit contact with the ill or injured person—such as wearing gloves and using a CPR breathing barrier—you can limit the possibility of catching a disease. Remember that EMS personnel provide care for ill and injured people every day without incident.
4. **Doing something wrong, or causing more harm:** You might be afraid that you will be sued if you make a mistake. As long as you act reasonably, you don't need to worry. All provinces and territories have laws to protect bystanders who give emergency help. Getting trained in first aid can give you the confidence, knowledge, and skills you need to respond appropriately to an emergency. Use your good judgment and stay within the realm of the skills in which you were trained. Once you start giving first aid, keep providing help until EMS personnel arrive. If you are unsure of what to do, call EMS/9-1-1 and follow the EMS dispatcher's instructions. The most harmful thing you can do is to do nothing at all.
5. **Stigma/Bias:** You might hesitate to provide first aid due to conscious or unconscious biases about the ill or injured person. These biases can be about many things, but could include the person's lifestyle, appearance, or circumstances. However, it's important to remember that everyone deserves help in an emergency. First aid is about providing support without prejudice: Focus on the person's immediate need for care, rather than any biases, and you can make a life-saving difference.

Thinking about these things now and mentally preparing yourself for an emergency will help you overcome your fears.

Legal Issues Around First Aid

Good Samaritan Laws

Good Samaritan laws, which protect First Aiders from financial liability, were developed to encourage people to help others in emergency situations. These laws assume a First Aider will do his or her best to save a life or prevent further injury. Good Samaritan laws require the First Aider to use common sense and a reasonable level of skill, as well as to give only the type of emergency care that is within his or her training. Good Samaritan laws usually protect First Aiders who act in the same manner as a "reasonable and prudent person" would in the same situation. For example, a reasonable and prudent person would:

- Move a person only if the person's life was in danger.
- Ask a responsive person (or the parent, guardian, or caregiver of a child or baby) for permission to help (consent) before giving care.
- Check a person for life-threatening conditions before giving further care.
- Call EMS/9-1-1.
- Continue to give care until more highly trained personnel take over.

If a First Aider's actions are grossly negligent or reckless, or if the First Aider abandons the person after starting care, Good Samaritan laws may not protect the First Aider.

! You may be legally obligated to provide first aid as needed to any child or baby in your care.

Workplace First Aid

According to the Canada Labour Code (2024), a workplace is "any place where an employee is engaged in work for the employee's employer."

The Canadian Centre for Occupational Health and Safety (CCOHS) (2024a) states that all Canadians have a fundamental right to a healthy and safe working environment. It explains that a health and safety program:

- Is a plan of action that is designed to prevent injuries and illness at work
- Is required under Occupational Health & Safety (OH&S) legislation in most Canadian jurisdictions
- Outlines the first aid requirements on a work site

Each province and territory in Canada interprets workplace health and safety regulations differently, and there are some regulations that apply specifically to the federal government and other national organizations.

Employers and employees are responsible for ensuring that care is provided in a timely manner in an emergency.

Everyone on the work site should know how to access first aid assistance, including how to:

- Activate your workplace emergency response system.
- Call EMS/9-1-1.
- Locate the first aid room.
- Summon the first aid attendant.
- Locate first aid kits and other equipment (such as AEDs).
- Understand the workplace protocol for the transport of ill or injured people.

!

Your workplace will consider certain injuries “rapid transport criteria,” based on your regional legislative requirements. This means that you must call EMS/9-1-1 for these injuries. You cannot transport the person yourself for these injuries; they must be transported by ambulance.

To prepare for emergencies and disasters in the workplace, follow your employer’s protocol.

!

To better understand the regulations about training levels, medication administration, and mandatory first aid equipment, contact or refer to the legislation that governs your workplace. You can also refer to the Canadian Red Cross First Aid Health and Safety Legislation page for more information.

Workplace First Aid Attendants

Employers must have a certain number of first aid attendants on the work site at all times. The size and type of workplace generally determines:

- The level of first aid training that workplace first aid attendants need.
- How many first aid attendants there must be.

First aid in the workplace can be governed by both national and provincial or territorial legislation. Workplace first aid attendants must be familiar with the legislation for the region that they work in.

!

If you are employed as a workplace first aid attendant, you have the duty to act. Regulations require you to provide care to the level of your training and to document all incidents appropriately.

Requirements and Responsibilities for Workplace First Aid Attendants

A first aid attendant of a workplace must:

- Have current first aid certification at the required level.
- Maintain their knowledge and skills.
- Be prepared to respond both alone and as part of a first aid team.
- Provide all care in a professional manner.
- Thoroughly document any first aid-related actions.
- Process paperwork according to the legislative requirements for their region and workplace.
- Report to their supervisor and joint health and safety committee as required.
- Follow up with the ill or injured person approximately 3 days after the person returns to work.
- Be familiar with specific elements of their work site.
- Be physically and mentally able to provide care for ill or injured workers.
- Provide any ill or injured workers with care that is within the scope of their training.
- Refer ill or injured workers to advanced care if the illness or injury is beyond the scope of their training.
- Record the ill or injured person's signs or symptoms.
- Record any time that a worker is exposed to a contaminant.
- Be responsible for ill or injured workers' care until:
  - The worker reaches a care facility.
  - Emergency personnel take over.
  - Someone with the same or a higher level of first aid training takes over.

Workplace first aid attendants must accept ill or injured workers' decisions about their care. As a workplace first aid attendant, you cannot overrule an ill or injured worker's decisions about their care or treatments.

Workplace first aid attendants may also need to know other information, including:

- Where emergency equipment is located
- How to properly complete documentation after a workplace incident
- What their workplace's specific emergency procedures are
- How to call for help in an emergency

Hazards

The Canadian Centre for Occupational Health and Safety (2024) defines a hazard as "any source of potential damage, harm or adverse health effects on something or someone."

A risk is a measure of how likely the hazard is to cause damage or harm.

In workplaces, there are practices to identify hazards and their levels of risk in the work environment. These practices are called hazard identification and risk assessment. They help workplaces find ways to remove or reduce potential harms before they happen.

You can apply these practices at home by:

- Getting training
- Having plans and supplies ready for emergency and first aid situations

Refer to the legislation that governs your workplace or the Canadian Centre for Occupational Health and Safety (CCOHS) for more information.

Getting Permission to Help

Once you decide to act, you need to get the ill or injured person's permission (also known as consent) to assist.
To get permission:

1. Tell the person who you are.
2. Tell the person that you are here to help.
3. Ask the person if that is okay.

If a baby or a child is ill or injured:

- Ask the parent, guardian, or caregiver for permission.
- If the child or baby is alone, you can assume you have permission to give first aid.

Special Situations

There are times when it is difficult to get permission to provide care for an ill or injured person or when the person denies the help of First Aiders or bystanders:

The Person Is Unresponsive Or Confused, Or Has a Mental Impairment

Someone who is unresponsive or confused, or who has a mental impairment, may not be able to grant permission. In these cases, the law assumes the person would give permission if he or she were able to do so. This is called implied consent. Implied consent also applies when a child or baby needs emergency medical assistance and his or her parent, guardian, or caregiver is not present.

The Person Refuses Care

An ill or injured person may refuse care, even if he or she desperately needs it. A parent or guardian also may refuse care for his or her child or baby. You must honour the person's wishes. Explain to the person why you believe care is necessary, but do not touch or give care to the person, and never attempt to give the person help by force. Remember, you should never put yourself in any danger. Stay nearby, if possible, in case the person later decides to accept your help or becomes unresponsive.

If you believe the person's condition is life-threatening, call EMS/9-1-1 and communicate that a person requires medical assistance but is refusing help. The EMS personnel who arrive will deal with the situation. If the person gives consent initially but then withdraws it, stop giving care and call EMS/9-1-1 if you have not already done so.

You and the Person Do Not Speak the Same Language

If you do not speak the same language as the injured or ill person, obtaining consent may be challenging. Find out if someone else at the scene can serve as a translator. If a translator is not available, do your best to communicate with the person by using gestures and facial expressions. When you call EMS/9-1-1, explain that you are having difficulty communicating with the person, and tell the dispatcher which language you believe the person speaks. The dispatcher may have someone available who can help with communication.

Duty to Report Child Abuse or Neglect

Every adult in Canada has a legal duty to report child abuse or neglect, even if it is not confirmed. Information around the specific how-to-report details can be found in your jurisdiction's Child Protection Act, but the duty to report is uniform in all acts. If you are responding to a first aid emergency and you think a child is being harmed, then there needs to be a report to child protection and/or police. Even if you are unsure, child protection needs to be informed and needs to guide the next steps. Also share your concerns with the EMS personnel who respond to the situation.

Responding to Disclosures of Violence

A person revealing experiences of abuse—past or present—can be challenging and upsetting. This is even more true if the individual receiving the disclosure is close to the person and/or knows the perpetrator. Your response to the disclosure is critical. Studies show that the manner in which a disclosure of interpersonal violence is handled is a significant factor in determining the psychological impact on the victim. Indifference and blame are damaging responses that can have long-lasting consequences.

If you receive a complaint of abuse, neglect, harassment, or bullying, you must know what steps need to be taken, when they need to occur, and how they need to be carried out. The complaint cannot be diminished or ignored. There must *always* be a response. Both verbal and non-verbal disclosures need to be handled sensitively while following specific procedures. If the disclosure is from a young person, your jurisdiction's Child Protection Act may govern how you respond.

The Emergency Medical Services System

The emergency medical services (EMS) system is a network of community resources and trained personnel, organized to give emergency care in cases of injury or sudden illness. The system begins when someone sees an emergency and decides to take action by calling EMS/9-1-1. This action allows the EMS dispatcher to take down information about the emergency and provide it to the trained EMS personnel who will respond to the scene. Many EMS dispatchers are also trained to provide first aid and CPR instructions over the phone to assist the caller until EMS arrives.

Understanding Your Role as a First Aider

First aid is the immediate care that is given to an ill or injured person until more advanced care can be obtained.

Your role as a First Aider includes four basic steps:

1. Recognize the emergency.
2. Protect yourself, the ill or injured person, and bystanders.
3. Access help (e.g., call EMS/9-1-1).
4. Act according to your skills, knowledge, and comfort level.

One of the simplest and most important ways of providing first aid is to call for help (EMS/9-1-1). By making this call, you ensure that the ill or injured person receives care from highly trained medical professionals.

Responding to the scene of an emergency involves providing emotional support as well as caring for injuries. When providing care, you should:

- Speak in a calm and reassuring manner. Ask for the ill or injured person's name and use it often.
- Communicate both verbally and nonverbally to reassure the person.
- Position yourself at eye level when you talk to the ill or injured person. Avoid unnecessary physical contact and any body language that could appear threatening.
- Actively listen to the ill or injured person. This involves four behaviours:
    1. Making every effort to fully understand what the person is trying to say.
    2. Repeating back to the person, in your own words, what the person said.
    3. Avoiding criticism, anger, or rejection of the person's statements.
    4. Using open-ended questions (i.e., avoid questions that can be answered with "Yes" or "No").

Understanding Your Role in the EMS System

The emergency medical services (EMS) system is a network of professionals linked together to provide the best care for people in all types of emergencies. As a member of the community, you play a major role in helping the EMS system to work effectively. Your role in the EMS system includes four basic steps:

1. Recognizing that an emergency exists
2. Deciding to help/take action
3. Activating the EMS system
4. Giving care until EMS personnel take over

Who Is Coming to Help

Emergency medical services (EMS) personnel have advanced training that allows them to provide medical care outside of the hospital setting. Depending on their level of training, EMS personnel have different roles and responsibilities. There are different kinds of trained personnel who may respond when a call is placed to EMS/9-1-1.

First Responders: These include police, firefighters, and job-specific personnel such as athletic trainers and workplace first aid response teams. They are trained in time-sensitive life-saving measures. Unlike lay responders (First Aiders), first responders have a legal obligation to act in an emergency when they are on duty.

Paramedics: These are highly specialized emergency personnel whose skills include both basic and advanced life support. Once on the scene, these professionals will take over the care of the person, including transportation to a hospital or other facility if necessary.

Activating EMS

In a life-threatening emergency, it is critical that someone activate EMS by calling EMS/9-1-1. Activating EMS will send emergency medical help on its way as quickly as possible. The sooner EMS personnel arrive, the higher the chances of a positive outcome.

EMS varies from community to community. Most people in Canada call 9-1-1 for help in emergencies, but in some areas of Canada and in many workplaces you may need to dial a different designated emergency number instead. If you live or work in an area where 9-1-1 is *not* the number to call in an emergency, make sure you know the designated emergency number to call.

Phone carriers are required to connect any 9-1-1 call made from a mobile phone, even if the phone does not have an active service plan. In most areas, you cannot text 9-1-1. Unless you have confirmed that the 9-1-1 call centre in your area supports texting, you should always call.

When to Call EMS/9-1-1

At times, you may be unsure whether EMS personnel are needed. To make the decision, use your best judgment based on the situation, your assessment of the ill or injured person, and information gained from this course and other training you may have received. Trust your instincts. When in doubt, make the call. If you think that an emergency exists, it probably does; you should call EMS/9-1-1 for professional help immediately.

Call EMS/9-1-1 if there is a danger to you or others, or if the ill or injured person has any of the following conditions:

- Unresponsiveness or an altered mental state (e.g., confusion)
- Difficulty breathing or no signs of breathing
- Persistent chest pain or pressure
- Life-threatening or uncontrollable bleeding
- Seizures
- Severe headaches
- Abnormal speech
- Injuries to the head, neck, back, or pelvis
- Blood in the vomit or urine
- An apparent mental health emergency
- Imminent childbirth

You should also call EMS/9-1-1 if the ill or injured person is not easily accessible, or if the situation involves any of the following:

- Fire
- An explosion
- A motor vehicle collision
- Hazardous materials
- Downed electrical wires
- Swift-moving water

Poison Centres

If none of the conditions above apply and you suspect that poisoning is the cause of the person's condition, call 1-844-POISON-X or your local poison centre instead of EMS/9-1-1. If any of the above conditions are true (for example, a person who may have swallowed poison is having difficulty breathing), or you are unsure of whether to call EMS/9-1-1 or poison control, call EMS/9-1-1.

Calling EMS/9-1-1 for a Child in Your Care

If you are a professional caregiver, you may have additional considerations when calling EMS/9-1-1 for a child in your care.

Once you have activated EMS, call another caregiver to come and stay with any other children while you attend to the ill or injured child. If the child is being taken to the hospital, call his or her parent or guardian and ask the parent or guardian to meet you there. If you are travelling in an ambulance, tell them you will call again when you know the name and location of the hospital and that you may not know this information until after you arrive. If you cannot go with the child in the ambulance, be sure to give the paramedics the child's medical information and your contact information.

After an Emergency

Being involved in an emergency and providing first aid can be stressful. After the emergency is resolved, you may have lingering feelings such as uneasiness, doubt, anxiety, and fear. After dealing with an emergency, it is often helpful to talk to somebody about the situation.

Everyone reacts to stressful situations differently. It is very difficult to predict who will or will not be affected by abnormal events. Some individuals may feel better in the few days after the event. Others may find that it takes longer for their stress to go away, and that it begins to impact their relationships.

Consider seeking professional help if you experience any of the following for more than two weeks after the emergency:

- Crying fits or uncontrollable anger
- Trouble eating
- Trouble sleeping
- Loss of engagement with former interests
- Unusual or unexplained pain (e.g., headaches or stomach aches)
- Fatigue
- Feelings of guilt, helplessness, or hopelessness
- Staying away from family and friends
- Ignoring daily tasks, such as going to work

For help dealing with ongoing stress symptoms, contact your local crisis intervention line. You may also speak to your family doctor or a mental health professional.

Documentation

If an incident occurs in a workplace (including a marine environment), it must be documented properly. The documentation may be paper and/or electronic. The reports you create are official legal documents: paper versions should be filled out in pen (not pencil), with any changes or corrections crossed out and initialed.

Good documentation is:

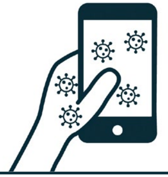
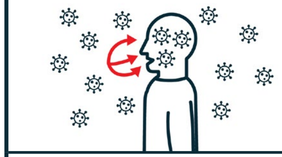
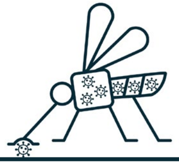
- Complete and accurate
- Legible
- Objective
- Completed as soon as possible (while your memory of the incident is fresh)

! Some workplaces have additional requirements dictated by regulations and legislation: ensure that you are aware of any local, provincial/territorial, or organizational laws and regulations that apply to you.

Lowering the Risk of Infection

Giving first aid care is a hands-on activity that can put you in close contact with another person’s bodily fluids (such as saliva, mucus, vomit, and blood), which may contain harmful pathogens (microorganisms that can cause disease or infection). Some pathogens pose a particular risk because of their long-term effects on the health of the infected person.

Pathogens spread from person to person through four modes of disease transmission. Some pathogens spread through only one of these routes, while others spread through several.

Mode of Transmission		
	Definition	**Example**
Direct Contact 	Occurs when bodily fluids from an infected person enter another person’s body	A cut on your hand comes into contact with an infected person’s blood. Examples: HIV/AIDS, Hepatitis, Herpes
Indirect Contact 	Occurs when germs from an infected object or surface enter another person’s body	You are not wearing gloves and you pick up a tissue that has been used by an infected person, and then you rub your eye. Examples: Meningitis, Influenza
Airborne Transmission 	Occurs when a person breathes in germs from the air	You are not wearing a face mask while providing first aid to an infected person. The infected person sneezes, sending germs into the air, and then you breathe them in. Examples: Measles, Tuberculosis
Vector-Borne Transmission 	Occurs when germs are introduced directly into the body	An infected mosquito bites you, injecting pathogens into your blood. Examples: Lyme Disease, Malaria

How to Prevent Diseases from Spreading

Personal Precautions

Personal precautions are the actions that individuals can take to reduce the risk of disease transmission. Examples include washing your hands frequently, treating all blood and other bodily fluids as infectious materials, covering your mouth and nose when sneezing, eating well, and getting enough exercise and sleep.

One way to significantly reduce your risk of infection is to inspect your hands regularly and cover even small cuts with adhesive bandages. This reduces the number of points where germs can enter your body.

Handwashing

Proper handwashing is an important precaution for preventing the spread of germs that cause many infectious diseases. Frequent handwashing is important as part of a daily routine; for example, before eating or drinking and after using the washroom.

Wearing gloves helps to protect you from infection, but it does not eliminate the need for proper hygiene. First Aiders should always wash their hands thoroughly when they have finished giving care, even if they wore gloves the entire time.

Use the following guidelines when washing your hands:

1. Always use warm running water and a mild soap.

2. Create a lather by rubbing your hands together with the soap—friction with the soap suds is what actually removes the germs from hands. Rub your hands together vigorously for at least 30 seconds.

3. Wash all parts of each hand. Be sure to scrub your palms and wrists, between your fingers, under your fingernails, and around the backs of your hands.

4. Dry your hands with a clean paper towel.

5. Turn the faucet off using the towel as a barrier between your hands and the faucet handle. Use the towel as a barrier for the door handle as well.

When to Wash Your Hands

Wash your hands after touching anything that is likely to carry germs (e.g., after wiping your nose, changing a diaper, or touching a pet), and before touching anything that could carry germs into the body (e.g., before handling food or touching an open cut). It is also a good habit to wash your hands frequently, for example when returning home from a public place.

In a first aid emergency, remember to wash your hands:

- Before and after contact with an ill or injured person.
- After handling dirty articles, instruments, or dressings.
- Before or after treating wounds.
- After removing gloves.

Hand Sanitizers

Hand sanitizers are not a substitute for hand washing, and are not suitable for cleaning visibly soiled hands. They should be used only as a temporary measure in situations where you are unable to wash your hands immediately. If you can see dirt on your hands, you should wash them with soap and water before using hand sanitizer.

When using an alcohol-based hand sanitizer to help decontaminate your hands, use the amount of product recommended by the manufacturer. Rub it thoroughly over all the surfaces of your hands, including your nails and in between your fingers, until the product dries.

Immunization

Most Canadians have been immunized against common diseases such as measles and tetanus. Some vaccine-preventable diseases are serious, and can lead to disability or death. Immunizations protect not only you, but also your family, friends, and co-workers.

Immunization introduces a substance into the body that builds up its resistance to germs that cause a specific disease. Some vaccinations may wear away with time. As a result, it’s possible that your immunity to a particular disease could decline. It is important to keep up with your immunization needs since protection against diseases through immunization is a lifelong process.

Some vaccines require more than one injection and a certain period of time between injections. If you are planning a trip outside the country, find out well before you leave which immunizations are recommended and required in order to safely go to the countries you will be visiting.

Because the risk of disease varies from place to place, this information cannot cover all the hazards that you might face. For specific guidelines on your particular situation, talk to your doctor or your community public health centre.

Equipment Precautions

Personal protective equipment (PPE) is the general term for items that protect you from contact with pathogens and contaminated objects. Examples include barrier devices such as safety glasses, goggles, face masks, CPR breathing barriers, and gloves. You should always use some type of barrier device between yourself and any material that could pose the risk of infection.

Any disposable equipment that you have used (e.g. gloves, breathing barriers) should be immediately disposed of in a labelled leak-proof container with a biohazard symbol.

Gloves

Wearing gloves is an important way to protect yourself while giving first aid. Most gloves found in first aid kits are disposable and latex-free, as some people are allergic to latex. Disposable gloves are meant to be worn once and then discarded; never wash or reuse disposable gloves. Gloves should fit properly. You should throw out any gloves that are discoloured, torn, or punctured.

Wear gloves when:

- You are providing care, especially if there is a possibility that you will come into contact with another person's blood or other potentially infectious material.
- You must handle items or surfaces soiled with blood or other potentially infectious materials.

When you are wearing gloves, try to limit how much you touch other surfaces. Avoid touching anything while wearing soiled gloves as pathogens can easily transfer from that surface to another person. If possible, remove soiled gloves and replace them with a clean pair before touching other surfaces or equipment in your first aid kit.

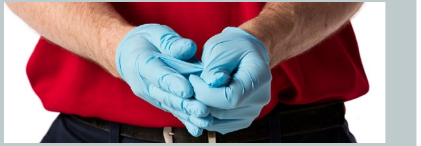
Consider asking people to begin helping themselves while you retrieve and/or put on your gloves. For example, a bleeding person can use his or her own hand to apply pressure to the wound. This can also be effective in situations where gloves are not available.

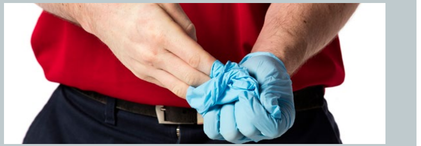
When you are finished providing care, remove your gloves using the proper technique to reduce the risk of contaminating your skin. Dispose of the gloves properly and wash your hands. When multiple people are in need of care, remove your gloves, wash your hands, and put on a clean pair before assisting the next person.

Proper Technique for Removing Gloves

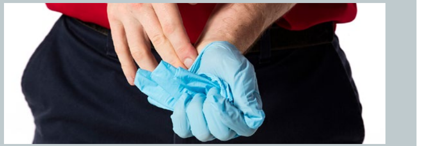
To remove soiled gloves without contaminating your skin:

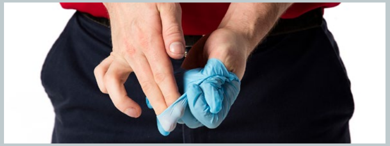
1. With one hand, pinch the glove at the wrist of your second hand, being careful to touch only the glove's outer surface.
2. Pull the glove down and off your hand.
3. Form the glove into a ball and hold it in the palm of your gloved hand.





4. Insert your gloveless thumb under the glove of your other hand at the inner wrist.
5. Pull the glove downward off the hand, turning it inside out and trapping the other balled glove inside.





6. Discard gloves appropriately.
7. Wash your hands thoroughly with soap and water for at least 30 seconds, using the proper handwashing technique.

CPR Breathing Barriers

CPR breathing barriers are used to reduce the risk of infection when giving rescue breaths by eliminating the need for mouth-to-mouth contact, protecting you from bodily fluids such as saliva and blood.

The most basic and portable type of breathing barrier is a face shield—a flat piece of thin plastic that is placed over a person's face, with an opening or valve that allows you to breathe into the person's mouth.

A pocket mask is a transparent, flexible device that creates a tight seal over the person's nose and mouth. The opening contains a filter or a valve that protects you from coming into contact with the person's bodily fluids and exhaled air.

Breathing barriers sized specifically for children and babies are available. If possible, select equipment that is appropriately sized for the injured or ill person.

Face Masks

Wearing a face mask can help protect you and others from infections. In order to work properly, masks should cover your mouth and nose.

There are different types of face masks that offer different amounts of protection.

You may choose to wear a mask if:

- You are sick.
- You have a medical condition that weakens your immune system.
- There is a pandemic.
- You are doing first aid.
- There is a hazard in your workplace, such as in a construction site.

> **!** Your workplace may have masking processes in place, depending on your regional legislative requirements. See the Government of Canada's website or the Canadian Centre for Occupational Health and Safety website for more information.

Cloth Masks

Cloth masks, also called non-medical masks, are usually made of fabric and fit loosely on the face. They are reusable and washable.

Medical-Grade Masks

Medical-grade masks are also known as "medical masks" or "surgical medical masks." They provide more protection than cloth masks. Medical-grade masks are disposable and should only be used once. They do not form a seal with the face.

Respirators

Respirators are a very protective type of mask. They are tested and certified by approval agencies, such as Health Canada. Respirators form a tight seal against the face and offer the highest level of protection against infection. They are disposable and should only be used once. N95 masks are an example of one type of respirator.

Environmental Precautions

Environmental precautions refer to the systems that are implemented in an area to reduce exposure to germs. Examples include making sure there is proper ventilation in the workplace, that people don't use the same sink for hygiene and food preparation, and that any contaminated materials are immediately disposed of in a dedicated biohazard garbage.

Designate a container for sharps (potentially infected sharp objects such as used needles and lancets). It should be puncture-resistant, leak-proof, and labelled with warning signs such as the biohazard symbol. To avoid infection, put all needles and similar sharp objects into this container immediately after they are used. It should not be used for other purposes.

! Many environmental precautions are the responsibility of the employer, but you can make suggestions if you notice something that could be improved.

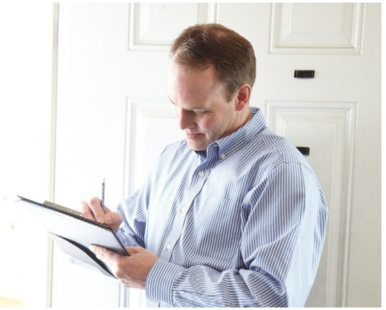
Cleaning and Disinfecting Surfaces and Equipment

Reusable equipment and surfaces that have been contaminated by blood or other potentially infectious materials need to be properly cleaned and disinfected before the equipment is put back into service or the area is reopened. Clean and disinfect surfaces and equipment as soon as possible after the incident occurs. Remember to wear appropriate personal protective equipment (PPE).

If blood or other potentially infectious materials have spilled onto the floor or another surface, take steps to prevent unnecessary people from accessing the area. If the spill contains sharp objects (e.g., shards of broken glass), do not pick them up with your hands. Instead, use tongs, a disposable scoop and scraper, or two pieces of cardboard to remove and dispose of them. Carefully wipe up the spill using absorbent towels, and/or use a solidifier (a fluid-absorbing powder).

After cleaning up the spill, flood the area with a freshly mixed disinfectant solution of approximately 1 part bleach to 9 parts water (a 10% solution). Always ensure that there is good ventilation, and wear gloves and eye protection when using bleach. Let the solution stand on the surface for at least 10 minutes, then use clean absorbent materials (such as paper towels) to wipe up the liquid and dry the area. Dispose of all materials used to clean up the spill in a labelled biohazard container. If a biohazard container is not available, place the soiled materials in a sealable plastic bag or a plastic container with a lid, seal the container, and dispose of it properly.

Soft materials such as clothes and linens that have been contaminated should be washed with soap and the hottest water available, at least 70°C (158°F). Hard-surfaced materials, such as dustpans, should be cleaned with a disinfectant solution. There is no need to dispose of soft materials or instruments as long as they are washed properly.



Handling an Exposure Incident

An exposure incident occurs when one person's bodily fluids risk infecting another person through contact with the eyes, mucous membranes (e.g., in the mouth or nose), or an opening in the skin (e.g., a cut). Being pricked by a used syringe is also an example of an exposure incident.

In the event of an exposure incident, follow these steps immediately:

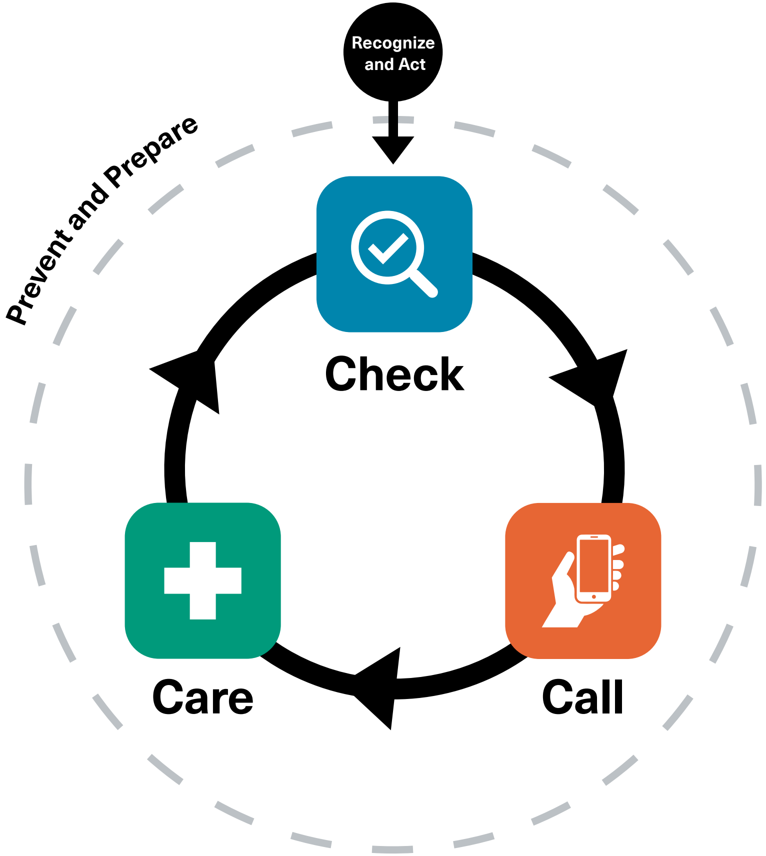
- Decontaminate the exposed area, if possible:
  - If your skin was exposed, wash the contaminated area with soap and water.
  - For infectious splashes into your mouth or nose, flush the area with water.
  - For infectious splashes into your eyes, irrigate the eyes with water, saline, or a sterile irrigant for 15 to 20 minutes.
- Report the exposure incident to EMS personnel or your healthcare provider.

If the exposure incident occurred in a workplace setting, notify your supervisor and follow your company's exposure control plan for reporting the incident and receiving post-exposure follow-up care. Some workplaces have additional requirements dictated by regulations and legislation: ensure that you are aware of any local, provincial/territorial, or organizational laws and regulations that apply to you.

! During a pandemic, it is important to follow all of the precautions outlined in the previous sections, as well as to stay home if you're sick, wear a mask if you're caring for someone who is sick, and follow your regional guidelines.

3 Check, Call, Care

If you encounter an ill or injured person, there are three simple steps that you must take:



Check

Once you recognize an emergency you must first check the scene, then check the person.

Check the Scene

Before rushing to help an ill or injured person, stop and take a good look at the scene. This will form an initial impression. Try to answer these questions:

Is the scene safe for you, the ill or injured person, and any bystanders?

Enter a scene only if it is safe to do so. Look for hazards such as spilled chemicals, hostile bystanders, or oncoming traffic. Listen for things such as ringing alarms or leaking gas. Smell for things such as gas or smoke. Avoid entering confined areas with poor ventilation and places where there is a risk of explosion (e.g., from leaking propane or natural gas). Do not enter the scene if you suspect that the person poses a risk to you, to others, or to him- or herself.

If hazards are present, stay at a safe distance and call EMS/9-1-1. Leave dangerous situations for EMS personnel. Once EMS personnel arrive and make the scene safe, you can offer your assistance as appropriate. Remember that conditions at the scene may change, so a safe area could quickly become dangerous. It is important to continuously monitor your surroundings even if your initial assessment revealed a low level of risk.

What happened? How did it happen?

Take note of anything that might reveal the cause of the emergency. If the person is unresponsive and there are no witnesses, your check of the scene may offer the only clues as to what happened. Use your senses to detect anything out of the ordinary, such as broken glass, a spilled bottle of medication, or an unusual smell or sound. Keep in mind that the ill or injured person may not be exactly where he or she was when the emergency occurred—someone may have moved the person, or the person may have moved in an attempt to get help.

How many ill or injured people are there?

Look carefully for more than one ill or injured person. A person who is moving or making noise, or who has very visible injuries, will likely attract your attention right away, but there may be a person who is silent and not moving or a person obscured by debris or wreckage who you do not notice at first. It is also easy to overlook a small child or a baby.

Is there someone to help?

Take note of bystanders who can be of assistance. A bystander who was there when the emergency occurred or who knows the person may be able to provide valuable information. Bystanders can also assist in other ways, such as by calling EMS/9-1-1, waiting for EMS personnel and leading them to the site of the emergency, getting needed items (such as an AED and first aid kit), controlling crowds, and reassuring the injured or ill person.

What is your initial impression of the ill or injured person?

Before you reach the person, try to form an initial impression about the person's condition and what is wrong. For example, does the person seem alert, confused, or sleepy? Look at the person's skin—does it appear to be its normal colour, or does it seem pale, ashen (grey), or flushed? Is the person moving or motionless? Does the person have any immediately identifiable injuries? Look for signs of a life-threatening illness or injury, such as unresponsiveness, trouble breathing, or life-threatening bleeding.

An ill or injured person's skin may become a different colour than usual. The colour that the person's skin turns when they are ill or injured will depend on their skin tone. An ill or injured person's skin may appear pale, ashen/greyish, yellowish, greenish, bluish, or purplish. These changes may be more obvious around the person's lips, ears, or fingers. The important part is to look for any changes from the person's usual skin tone, if possible, because this is a sign that there is not enough oxygen circulating in their body.

Check the Person (Primary Assessment)

If it is safe to do so, quickly check the person to determine his or her initial condition and whether there are any life-threatening concerns. This is called the primary assessment.

1. Check the person to see if he or she is responsive:
    - Does the person respond when you talk to him or her (e.g., does the person open his or her eyes, move, moan, or talk to you)?
    - Does the person respond when tapped on the shoulder?

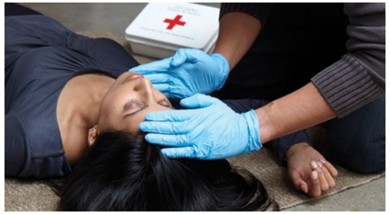
    A person who does not respond at all is considered to be unresponsive.
2. Check the person's ABCs: Airway, Breathing, and Circulation.

! Checking the ABCs is a rapid assessment and should be done as quickly as possible.

A = Check the Airway

Your first job is to make sure the person has an open airway. The airway is the pathway that connects the mouth and nose to the lungs. If it is closed or blocked, air cannot get in. The airway is most commonly blocked by the tongue. If the person is speaking, moaning, or crying, the person's airway is open.

If the person is unresponsive, perform a head-tilt/chin-lift. The head-tilt moves the back of the tongue away from the airway, and the chin-lift opens the epiglottis.



Performing the Head-Tilt/Chin-Lift

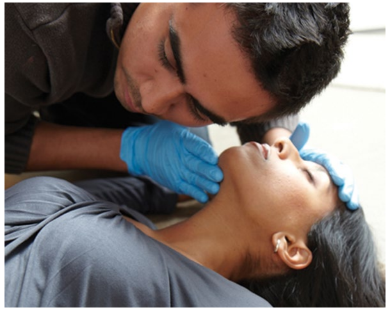
To perform a head-tilt/chin-lift, place one hand on the person's forehead and 2 or 3 fingers under the chin. Gently tilt the head back until the chin is pointing upward.

B = Check Breathing

Next, check for breathing. Someone who can speak or cry is breathing. Check for normal breathing for 5 to 10 seconds. To assess breathing, put your cheek close to the person's face so that you can hear and feel air coming out of the person's nose and mouth while you watch the chest rising and falling. A person is breathing normally if air is moving in and out of the lungs and the chest is rising and falling in a normal, regular pattern.

Agonal Respiration

A person who is not breathing normally may be occasionally gasping for air: this is a reflex action called "agonal respiration" and unlike normal breathing, it is irregular and sporadic. Because agonal respiration does not oxygenate the blood, it is not considered normal breathing. A person who is experiencing agonal respiration is in cardiac arrest and requires immediate assistance.



Agonal respirations originate from lower brainstem neurons as higher centres become increasingly hypoxic (oxygen-deprived) during cardiac arrest. With agonal respiration, the diaphragm is still receiving intermittent residual impulses from the brain, resulting in sporadic gasping breaths. Agonal respiration is sometimes referred to as "air hunger" and it can appear as snorting, gurgling, moaning or gasping, a gaping mouth, or laboured breathing. The duration differs from person to person, lasting from a few minutes to hours.

C = Check Circulation

If the person is breathing normally (more than an occasional gasp), his or her heart is beating. Checking circulation means quickly looking at the person from head to toe for signs of life-threatening external bleeding. Life-threatening bleeding must be controlled as soon as possible.

Unresponsiveness, trouble breathing, and life-threatening bleeding are all signs of a life-threatening emergency. If your initial check of the person reveals any of these conditions, you must provide care for that condition immediately. Make sure that someone calls EMS/9-1-1 right away, and obtain an AED and first aid kit if these items are available.

Obvious Signs of Death

Obvious signs of death include:

- Torso transection (torso cut into two pieces)
- Decapitation (detached head)
- Decomposition

If you encounter a person with one or more of these signs, call EMS/9-1-1 and follow the dispatcher's instructions. Leave the body and scene exactly as they were found, as the area could be considered a crime scene.

Rolling a Person from a Face-Down to a Face-Up Position

A person can collapse in a variety of positions. If a person is lying face down, is unresponsive, and not breathing, or if the face-down position makes it impossible to check the person's ABCs, then the person must be rolled into a face-up position without delay.

Move an ill or injured person only if:

- The person's position stops you from giving care for a life-threatening injury or illness.
- The person is blocking access to someone with a more serious injury or illness.
- The scene is becoming unsafe.

To roll a person from a face-down to a face-up position:

1. Support the head while rolling the person.
2. Try to roll the person as one unit (head, back, and legs at one time).
3. Open the airway with a head-tilt/chin-lift once the person is facing upward.
4. Check the person's ABCs.

Call

If you identify an unresponsive individual or an individual with a life-threatening condition in your initial check, you must always activate EMS.

Whenever possible, use a mobile phone or ask a bystander to call EMS/9-1-1. Having someone else call is better than doing it yourself; this way, you can stay with the ill or injured person and continue to give first aid. If you are alone with the person and you do not have a mobile phone, call out loudly for help. If no one comes, get to a phone as quickly as you can and call EMS/9-1-1. As soon as you hang up, return to the person.

If someone else has to leave to make the call for you, ask that person to come back and tell you what the EMS/9-1-1 dispatcher said. If using a mobile phone, the person can stay with you while placing the call and speaking to the dispatcher.

! Any time you activate EMS, you should also obtain a first aid kit and an AED if they are available.

If You Are Alone: Call First or Care First?

If you are alone without a phone and there is no one to send to call EMS/9-1-1, you may need to decide whether to call first or give care first. Unless the situation specifically requires you to provide care before calling EMS/9-1-1, you should always activate EMS first so that help will arrive as soon as possible.

You should provide care first in the following situations:

The person is choking or is experiencing anaphylaxis and carrying epinephrine.

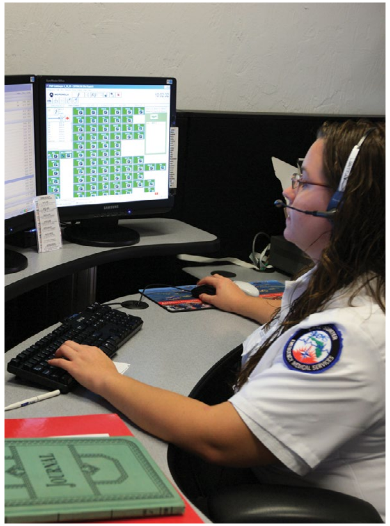
In these cases, the person could die before EMS arrives, so providing immediate care is your highest priority. Moreover, these situations can be corrected by First Aiders, so immediate care may actually improve the person's condition. If a person experiencing anaphylaxis is *not* carrying epinephrine, there is little that you can do as a First Aider, so you should call EMS/9-1-1 first before providing care.

The person has life-threatening bleeding.

Life-threatening bleeding quickly reduces the body's blood volume, which can be fatal. Apply direct pressure immediately, then call EMS/9-1-1 as soon as possible. In many cases, the person will be able to apply pressure to his or her own injury while you (or a bystander) call EMS/9-1-1.

The person is an unresponsive child or baby who is not breathing.

Children's organs require high levels of oxygen in the blood to function efficiently and can rapidly shut down when oxygen levels are lowered. For this reason, cardiac arrest in children is more likely to be caused by low oxygen levels than by a problem with the heart itself. If you find a non-breathing child or baby who is unresponsive, you must introduce oxygen into his or her system as soon as possible. Immediately do 2 minutes of CPR (5 cycles of 30 compressions and 2 breaths) to increase the oxygen level, then quickly call EMS/9-1-1 before returning to provide more care.



When You Call EMS/9-1-1

When you call, the EMS dispatcher who answers will likely ask:

- Where is the emergency (e.g., the address, nearby intersections, or landmarks)?
- What is the nature of the emergency (i.e., is police, fire, or medical assistance needed)?
- What telephone number are you calling from?
- What is your name?
- What has happened?
- How many people are involved and what is their condition?

Don't hang up until the dispatcher tells you to. The dispatcher may need more information. Many dispatchers are also trained to give first aid and CPR instructions over the phone, which can be helpful if you are unsure of what to do or need to be reminded of the proper care steps.

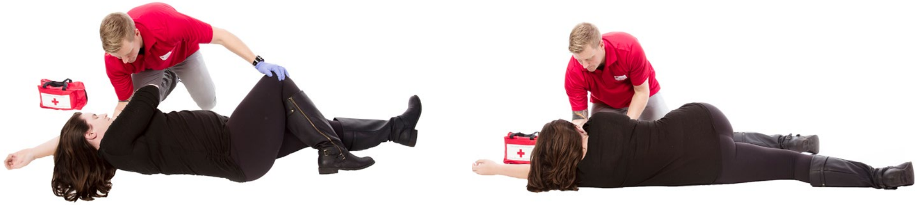
Care

Care for any life-threatening conditions first. Give the care that is needed, within the scope of your knowledge and training, and follow these general guidelines:

- Monitor the person's breathing and level of responsiveness.
- Help the person rest in the most comfortable position. If necessary, roll the person into the recovery position.
- Keep the person from getting chilled or overheated.
- Reassure the person by repeating that you are there to help and that EMS personnel have been called (if this is true).
- Continue to watch for changes in the person's condition.

Recovery Position

A person who is unresponsive or has an altered level of responsiveness should not be left in a face-up position, as the airway can become blocked by the person's tongue or the person's saliva or other bodily fluids. You can help protect the airway by rolling the person onto his or her side and into the recovery position.



It is usually safest for any ill or injured person to be in the recovery position, so long as this doesn't interfere with providing care. However, the recovery position is unnecessary if the person is fully responsive and able to protect his or her own airway.

You should avoid rolling a person if doing so could worsen his or her condition (e.g., if the person's leg appears to be broken). As always, you should move the person only if it is safe to do so.

To roll a person safely into the recovery position:

1. Raise the person's arm that is closest to you.
2. Place the arm farther from you across the person's chest with the palm against the cheek.
3. Raise the knee of the leg farther from you.
4. Roll the person as one unit by pulling the raised knee and supporting the head and neck with your other hand.
5. Position the person on his or her side, and slide the bent knee into a position that prevents the person from rolling onto his or her face.
6. Move the person's other arm into a position of comfort in front of the body.
7. Reassess the person's ABCs.

The steps above are recommended, but there are other effective methods of moving a person into the recovery position. Regardless of how you do it, the important things to remember are as follows:

- Support and protect the head while rolling the person.
- Try to roll the person as one unit (head, back, and legs at the same time).
- Roll the person into a position where the body will stay safely on its side.
- Position the head so that it keeps the airway open.
- Check the ABCs after you complete the roll.

When to Stop Giving Care

Once you begin providing care to an injured or ill person, you must continue to give the appropriate care until:

- Another trained First Aider or EMS personnel takes over.
- You are too exhausted to continue.
- The scene becomes unsafe.

When More Than One Person Is Ill or Injured

If you are in a situation where there are several ill or injured people, the general principle is to provide care to the people who need it the most urgently. This involves deciding whose illness or injuries pose the greatest risks, as well as deciding who you are most able to help given your level of training. The process of sorting and providing care for multiple ill or injured people according to the severity of their conditions is called triage.

As an example, if one person has minor bleeding and another person has life-threatening bleeding, you should help the person with life-threatening bleeding first. EMS personnel will arrive before the minor bleeding becomes serious.

Guidelines for Helping an Ill or Injured Person with Medication

Helping a person with medication means helping the person find medication, preparing it for them, handing it to them, or guiding them through taking it. It is different than administering medication.

Giving, or "administering," medication means directly delivering it for the person. For First Aiders, this usually means putting it in their mouth, spraying it into their mouth or nose, or injecting it.

You should only **help** a person take his or her medication if:

- It is safe to do so,
- The person is responsive,
- And the person has in some way expressed a need for help with finding or preparing the medication.

You should only **administer** medications if they are life-saving medications, such as asthma inhalers, epinephrine auto-injectors, or naloxone.

> **!** If you are employed as a workplace first aid attendant, the rules for helping with and administering medication may be different. Follow your workplace regulations and regional legislation.

When helping someone with his or her medication, check the label to ensure that it is the correct medication and, if it is a prescription medication, that it was prescribed for the person who will be taking it. You should also carefully read over any instructions or warnings (e.g., how much the person should take and when it should be taken). You should read the label at least twice: once when you find the medication, and again before you hand it to the person.

If there is no name on the label, confirm with the person that it is the medication he or she wants to take. You must also ask if the person has any allergies or is taking anything that could interfere with or react negatively with the medication. Quickly review these details with the ill or injured person and obtain his or her permission before helping.

> **!** Write down what medication was taken, how much of it was taken, and when it was taken. This information will be useful to EMS personnel.

Finding the Medication

When helping a responsive ill or injured person find his or her medication, listen to instructions from the person on where to find it. If the person cannot speak, look in places where people typically keep their medication (e.g., backpack, purse, or pocket), or look for physical cues from the person (e.g., the person pointing at a bag). If the person cannot speak and you are helping with prescription medication, ask the person to confirm the name on the label by using physical signals (shaking or nodding the head, blinking once or twice, etc.). If the person is unable to do this, you may be able to confirm the person's identity by asking bystanders, looking for a piece of photo ID, or checking for a medical identification product.

Preparing the Medication

Preparing the person's medication varies depending on the type of the medication and its instructions. For example, preparing oral medication may simply involve handing the person the correct number of tablets. In the case of an inhaler or auto-injector, you may have to remove the cover and follow the preparation instructions provided on the package before handing it to the person for self-administration.

Guiding the Person in Taking the Medication

Guiding the person in taking his or her medication also varies depending on the type of medication. For example, with tablets, this may involve telling the person to chew them or place them under the tongue. With an inhaler, this may involve instructing the person to shake the inhaler and exhale before dispensing the medication, or helping the person hold the inhaler to his or her mouth. When simply guiding the person, you do not press on the inhaler's plunger yourself. With an auto-injector, you may guide the person by showing where on the outer thigh the epinephrine should be injected.

Giving (Administering) Life-Saving Medication

Giving, or “administering,” life-saving medication means directly delivering it for the person. For First Aiders, this usually means putting it in their mouth, spraying it into their mouth or nose, or injecting it.

For asthma inhalers and epinephrine auto-injectors, you should try to help the person if possible, and only administer the medication for them if they are unable to do it themselves. You should only administer asthma inhalers or epinephrine auto-injectors if:

- It is safe to do so,
- The person is responsive,
- The person has expressed a need for help with taking the medication,
- And the medication was prescribed for the person.

> **!** Naloxone is different from other life-saving medications. You can administer naloxone to a person who needs it, even if they are unresponsive or the medication does not belong to them.

Secondary Assessment

After you have identified and cared for any life-threatening conditions found in the primary assessment, you must check the person for other injuries and conditions that may require care. This is called the secondary assessment.

If the person’s ABCs seem normal, do a secondary assessment to look for injuries or conditions that were not identified in your primary assessment. The secondary assessment consists of three steps:

1. Asking questions
2. Checking the quality of the person’s vital signs
3. Doing an injury check

> **!** If possible, record the findings from the secondary assessment or have someone else record them to help you remember. When EMS personnel arrive, tell them what you found.

Ask Questions

Interview the ill or injured person (if he or she is responsive) and any bystanders at the scene to get more information. Asking the following SAMPLE questions can provide useful information about the person's situation:

S	**Signs and symptoms —** Do you have any cuts or bruises? How do you feel? Do you feel any pain? Does anything feel different?
A	**Allergies —** Are you allergic to anything?
M	**Medications —** Do you take any medicine? What is it for?
P	**Past medical history —** Do you have any medical conditions such as heart disease or other illnesses? Has this happened before?
L	**Last oral intake —** When did you last eat or drink? What did you have?
E	**Events leading up to the emergency —** What happened?

Check the Vital Signs

Check the quality of the person's vital signs by evaluating his or her level of responsiveness, breathing, and skin.

Level of Responsiveness: Is the person alert or sleepy? Does the person seem confused? Is the person's awareness increasing, decreasing, or staying the same?

Breathing: Listen for sounds. Is the breathing fast or slow? Effective or adequate? Shallow or deep? Is breathing painful for the person?

Skin: Is it dry or wet? Is it an unusual colour or temperature?

A person's respiratory rate directly impacts the amount of oxygen that enters his or her bloodstream. Slower breathing brings less air into the lungs in a given period, and therefore decreases the amount of oxygen that crosses into the bloodstream. Breathing that is either too fast or too slow can also throw off the balance of oxygen and carbon dioxide in a person's blood. In a first aid emergency, a person's breathing rate can be affected by injury, blood loss, shock, pain, and anxiety. Providing continual care can help restore the person's breathing rate to normal.

An ill or injured person's skin may lose its underlying red tones, becoming more grey or white than usual. In people with darker skin, these changes may be harder to identify: skin may appear ashen-grey, yellow-brown or greyish-green. Changes may be most easily visible on the inside of the lips, the nail beds, or the skin around the mouth, which may be paler or have a dark blue tone due to the blueish tint of deoxygenated blood. The important thing is to note any changes from the person's normal skin tone, if possible.

Injury Check

The goal of an injury check is to look carefully for injuries that were not identified during the primary assessment. An injury check may involve a focused examination or a hands-on check, depending on the comfort level of the person and whether the person is responsive.

Focused Examination

If the person is responsive and able to answer questions, do a focused examination. Keep watching the person's vital signs. If the person's condition deteriorates, stop the examination and give first aid immediately.

To do a focused examination:

1. Explain that the purpose of the examination is to identify injuries.
2. Ask the person if anything hurts or feels uncomfortable.
3. If the person indicates an area of pain, discomfort, or concern, look at the area for signs of injury including discolouration (bruises) or deformities (odd shapes). For privacy reasons, do not remove any of the person's clothing unless it makes providing first aid difficult.
4. If there are no signs of any injury, ask focused questions about how the person feels. The symptoms the person describes might help to determine whether EMS/9-1-1 needs to be called and what kinds of care should be provided.
5. If you find a medical identification product, be sure to read it carefully. It may indicate what is wrong, who to call for help, and what care to give.
6. If the person doesn't complain of any pain or tenderness, and there are no signs of injuries, ask the person to rest for a few minutes in a comfortable position. Check the quality of the person's vital signs and ensure the ABCs are still unaffected. If there is no visible problem, help the person to stand up slowly when he or she is ready.
7. Based on your findings, decide whether you need to call EMS/9-1-1, and provide first aid care as needed.

If the person is responsive, you will usually be able to get the information you need from a focused exam and SAMPLE questions alone, but there may be situations where touching the person is necessary to assess an injury. If so, you may need to do a portion of the hands-on check, focusing on the injured area.

Hands-On Check

If a person is breathing but unresponsive, or is otherwise unable to communicate what is wrong, you may need to do a hands-on check to assess whether further first aid is required.

Conducting a hands-on check involves systematically checking the person from head to toe for signs of injury. Look and feel for any abnormalities such as bumps, soft spots, deformity, bruising, and bleeding. You should also look at the ground around the person for signs of blood or other body fluids. Continue to watch the person's ABCs and vital signs as you perform this check. If the person's condition deteriorates, stop the hands-on check and give first aid immediately.

Begin by checking the head, then work downward, focusing on the chest, abdomen, and legs before checking the arms. This prioritizes the areas that are more prone to life-threatening bleeding and organ damage.

When checking the chest, feel the ribs for signs of deformity. If the person is unresponsive, watch the rib cage as the person breathes. Both sides should expand at the same time. If the person is responsive, ask him or her to take a deep breath (if it doesn't cause any pain) to make it easier to check the expansion of the rib cage.

When checking the abdomen, press on it gently. It should be soft to the touch. If it feels hard or gentle pressure is painful, check carefully for bruising (some of the person's clothes may need to be moved or removed at this point).

Pushing on a person's injured pelvis can cause serious injury or worsen an existing condition, so this area should not be touched during the hands-on check.

! Be careful not to reach underneath someone during a hands-on check because there could be glass or other objects that could hurt you.

Continual Care

A person's condition can change while you are waiting for EMS personnel to arrive. Do the following to provide continual care:

1. Have the person rest.
2. Help the person maintain a normal body temperature.
3. Monitor the person's condition and ABCs.
4. Move the person into the recovery position, if necessary.
5. Give comfort and reassurance to the person.

Helping the person stay calm has physiological benefits, such as decreasing the heart rate, reducing pain, slowing and deepening breathing, stabilizing blood pressure, and relaxing the body's muscles.

To help a person calm down and control his or her breathing:

1. Encourage the person to maintain eye contact with you.
2. Have the person breathe in through his or her nose while you raise your arm and count to five. Breathe with the person.
3. Have the person breathe out through his or her mouth, making an audible sound, while you slowly lower your arm and count to ten.
4. Repeat 3 to 5 times, providing encouragement in a calm voice.

Should You Transport an Ill or Injured Person to the Hospital?

You may decide to take the ill or injured person to a hospital, urgent care clinic, doctor's office, or community first aid station if:

- The person is a friend or family member.
- The person's injuries are minor and non-life-threatening.
- There is no risk of the person's condition getting worse.
- There is no risk of the person experiencing an altered level of responsiveness.

If you decide it is safe to transport the person yourself, take someone else with you, if possible, to help keep the ill or injured person comfortable and to watch for any changes in his or her condition. This will let you focus on driving safely. Remember to obey traffic laws. No one will benefit if you are involved in a motor vehicle collision or get a speeding ticket on your way to the medical facility.

Never let an ill or injured person drive a motor vehicle for any reason. Driving is a high-risk activity that requires concentration, so getting behind the wheel while ill or injured is extremely dangerous. Even a person whose condition is mild could get worse while he or she is driving, and his or her ability to safely operate the vehicle could easily be compromised. Remember that it is not only the health and safety of the driver that is at stake, but that of everyone else on and near the road.

Shock

A person who is ill or injured may go into shock. Shock happens when the vital organs do not get enough oxygen-rich blood. Shock is a life-threatening condition.

Common Causes

There are different types of shock, depending on what caused it. Regardless of which type of shock a person is experiencing, First Aiders should provide the same care.

These types of shock include:

- Hypovolemic shock, which happens with significant fluid loss (such as severe blood loss, burns, vomiting, or diarrhea)
- Cardiogenic shock, which happens with heart damage
- Distributive shock, which happens with abnormal blood flow. Sub-types include:
  - Septic shock, which happens with infection
  - Anaphylactic shock, which happens with severe allergic reactions
  - Neurogenic shock, which happens with spinal cord injuries
- Obstructive (mechanical) shock, which happens when a physical block does not allow the heart to fill or empty properly

What to Look For

The following are signs and symptoms of shock:

- Anxiety
- Cool, clammy skin
- Skin that is a different colour than usual
- Weakness
- Confusion
- Excessive thirst
- Rapid breathing
- Drowsiness or loss of responsiveness
- Nausea and vomiting

What to Do

The best thing you can do when a person is in shock is to call EMS/9-1-1. While you are waiting for EMS personnel to arrive, provide care by:

1. Caring for the cause of the shock.
2. Having the person rest.
3. Keeping the person warm.
4. Monitoring the person's ABCs.
5. Providing comfort and reassurance.

Providing First Aid for Someone with a Disability

It is not uncommon to feel intimidated when providing first aid to a person who has different abilities, because there is often uncertainty about how to care for the person. Remember that people are more similar than they are different, both physiologically and psychologically, and most aspects of first aid care do not vary from person to person.

Remember that a person's particular needs may not be visible, and that the person (or the person's direct caregiver) is the best source of information about his or her unique situation. If you are unsure, ask what you can do to help. The person is likely to appreciate your consideration.

General Tips for Providing First Aid to a Person with a Disability

Remember the following tips when providing care for a person with any type of disability:

- As with all first aid, you need permission to help and should explain what you intend to do. These basic principles do not change because the person has different abilities.
- Avoid stereotypes and make no assumptions about what abilities the person has or does not have. Remember that not all disabilities are visible.
- Be confident and reassuring.
- If you cannot understand what the person is saying, politely ask him or her to repeat it.
- Don't touch or speak to service animals. They are working and have to pay attention at all times.
- Get permission before touching assistive devices, including wheelchairs.

Providing First Aid for Someone with Vision Loss

Examples of vision loss include tunnel vision (where a person cannot see objects to the side), lack of central vision, and total blindness, in which the person receives no visual information from the world around them. Most people with vision loss still have some degree of sight.

Keep the following in mind when providing first aid to an individual with vision loss:

- If you need to leave the person, let him or her know that you are leaving and will be back.
- Narrate your actions so that the person can follow what you are doing.
- If you're unsure about how to provide directions, simply ask the person how he or she would like you to do so.

Providing First Aid for Someone with Hearing Loss

Keep the following points in mind when providing first aid to an individual with any type of hearing loss:

- Get the person's attention before speaking. The best way to do this is usually by lightly touching the person's shoulder or gently waving your hand.
- Ask the person how you can help. Don't shout.
- If communication is difficult, ask if the person prefers to communicate in another way, such as using a pen and paper.
- Be patient if you are using a pen and paper to communicate. American Sign Language may be the person's first language and it has its own grammatical rules and sentence structure.
- If the person uses a hearing aid and you are having trouble communicating, minimize background noise or move to a quieter area, if possible.

Providing First Aid for Someone Who Is Deafblind

"Deafblind" describes people who have some degree of both vision and hearing loss. Many people who are deafblind are accompanied by an intervenor (a professional who helps with communication). If an intervenor is accompanying the person, tell him or her who you are, but then speak directly to the ill or injured person. Don't touch the person abruptly and don't touch the person without permission.

Providing First Aid for Someone with a Physical Disability

There are many different types of physical disability, and not all of them are visible. The important thing is not to diagnose the person: what matters is determining whether the conditions you encounter are pre-existing or whether they are signs of the injury or illness you are providing care for.

Keep the following tips in mind when providing first aid to an individual with a physical disability:

- Speak naturally to the person (physical and mental disabilities are not the same thing).
- Adjust your position if necessary so that you can make eye contact with the person while providing care.

Providing First Aid for Someone with an Intellectual or a Developmental Disability

It may not be apparent that a person has an intellectual or developmental disability unless this fact is communicated to you.

Keep the following points in mind when providing first aid to an individual with an intellectual or a developmental disability:

- As much as possible, interact with the person as you would with anyone else in the same situation.
- Use straightforward language when communicating.
- Give one piece of information at a time.

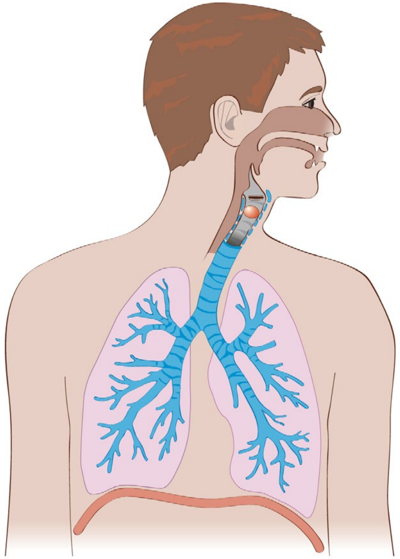
Providing First Aid for Someone with a Speech or Language Impairment

Speech and language impairments may affect a person's ability to communicate verbally, with written language or both. Assistive devices such as communication boards are often used by individuals with severe speech or language impairments.

Keep the following tips in mind when providing first aid to an individual with a speech or language impairment:

- If possible, ask questions that can be answered with "Yes" or "No."
- Give the person time to communicate and answer your questions.
- Wait for the person to finish speaking and do not try to finish his or her sentences.

4 Choking



The airway is the passage that connects the nose and mouth with the lungs. Choking occurs when the airway becomes partially or completely blocked by a foreign object (e.g., a piece of food or a small toy), by swelling in the mouth or throat, or by fluids, such as vomit or blood. If the airway is blocked by the person's tongue or by swelling, this is called an anatomical obstruction. If it is blocked by a physical object, this is called a mechanical obstruction.

Children younger than 5 years old have a particularly high risk of choking because their airways are about the size of their little fingers, but a person of any age can choke.

Anatomy and Physiology

The respiratory system consists of the airway and the lungs. When breathing in, air moves from the outside world into the lungs through the airway. The respiratory system constantly supplies the body with the oxygen it needs and removes carbon dioxide. The process is largely involuntary and is controlled by the brain.

Partial Choking

Partial choking happens when the airway is partially blocked. Coughing is the body's way of clearing the airway, and so it may indicate a partial airway obstruction. A person who is coughing is still able to breathe. Since forceful coughing usually eliminates the obstruction, encourage the person to keep coughing. Stand by and monitor the person in case further help becomes necessary. Note that the care for complete choking will be ineffective for partial choking, because it depends on creating pressure behind the blockage (which is impossible unless the blockage is complete).

If the person is or becomes too weak to cough, his or her condition will quickly deteriorate into complete choking. If a choking person is unable to cough forcefully for any reason, call EMS/9-1-1 immediately and monitor the person's condition closely.

Complete Choking

Complete choking happens when the airway is completely blocked. When a person is experiencing complete choking, he or she is unable to breathe and is in a life-threatening situation. Immediate first aid (and possibly medical intervention) is required to remove whatever is blocking the airway.

Common Causes

Any medical condition that affects a person's ability to chew and/or swallow increases his or her risk of choking. So can dental problems or poorly fitting dentures that affect a person's ability to chew food properly.

Common causes of choking include the following:

- Trying to swallow large pieces of food
- Eating while talking, laughing, walking, or running
- Eating too quickly

Choking Hazards

Foods

- Nuts and seeds
- Hot dogs and sausages
- Chunks of meat or cheese
- Chunks of fruit (e.g., apples)
- Small fruits (e.g., whole grapes and cherries)
- Hard raw vegetables (e.g., carrots and celery)
- Popcorn
- Peanut butter
- Hard, gooey, or sticky candy (e.g., peppermints, marshmallows, and gummy bears)
- Foods that break easily into small pieces (e.g., teething biscuits and cookies)

Household Objects and Toys

- Plastic bags, broken or uninflated balloons (the thin material can block the airway)
- Coins
- Buttons
- Small “button” batteries (e.g., those found inside watches, car key fobs, and hearing aids)
- Magnets
- Marbles
- Small rocks, beads, or decorative stones
- Pen and marker caps
- Jewellery
- Pills and vitamins
- Items from the garbage or recycling (e.g., corners of milk bags and pull tabs from cans)
- Toys meant for older children, which may be small or have small parts

Prevention

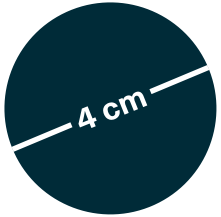
The following may reduce the risk of choking in adults:

- Chewing food well before swallowing
- Eating slowly and calmly
- Avoiding talking, laughing, walking, and other kinds of physical activity while chewing

The following may reduce the risk of choking in children and babies:

- When babies start eating solid food, begin with purées as opposed to solid pieces.
- Always supervise children and babies when they are eating.
- Teach children to eat calmly, chew properly, and not to speak with a mouthful of food.
- Encourage children to sit while eating.
- Make sure that babies and young children cannot reach objects small enough for them to swallow.
- Remember that children can choke on soft plastic (e.g., the cut-off corners of milk bags) and rubber (e.g., burst balloons) as well as hard objects, so keep these items out of reach.

! Toys smaller than 4 cm (1.5 in.) in diameter are choking hazards for babies and toddlers. Use the following guideline: if an object can fit through a toilet paper tube, it is not safe for children younger than 4 years old.



Partial Choking

What To Look For

Typical signs of partial choking include the following:

- A look of panic, with wide eyes
- Forceful or weak coughing
- One or both hands clutching the throat

What To Do

Call

It is not usually necessary to call for help for partial choking, though you may need to do so if the obstruction does not clear or the person's condition worsens.

Care

1. If the person is coughing or can speak, encourage him or her to cough forcefully, and do not interfere. Forceful coughing may be enough to clear the obstruction on its own.
2. Encourage or assist the person to sit upright, if possible, as this will make coughing easier and more effective.
3. Continue to monitor the person's condition until either the obstruction clears itself or the person's condition worsens.

Complete Choking

What To Look For

The signs and symptoms of complete choking include the following:

- An inability to speak, cough, or breathe
- High-pitched squeaking noises
- Flushed skin that becomes a different colour than usual
- A look of panic with wide eyes
- One or both hands clutching the throat

What To Do

Responsive Adult or Child Over 12 Months

Call

- If possible, send someone to call EMS/9-1-1 and get an AED while you care for the person.
- If you are alone, immediately begin providing care for complete choking. Shout for help to try to attract the attention of a bystander, but do not delay care by calling EMS/9-1-1 yourself.

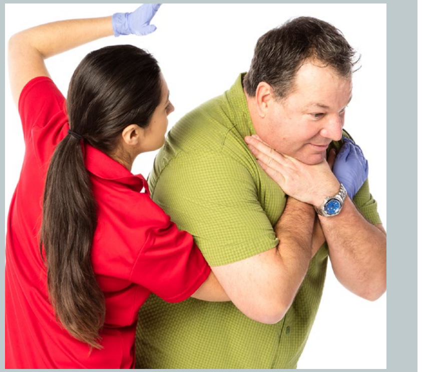
Care

1. Try to dislodge the object by combining any two of the following three options: back blows, abdominal thrusts, and chest thrusts. Continue alternating between the two methods until the object comes out, the person begins to breathe, or the person becomes unresponsive.

You may need to adapt which combination of the methods you use depending on the specific circumstances. For example, if the person is pregnant, or you cannot fully reach around the person, you will not be able to provide abdominal thrusts and will therefore have to do a combination of back blows and chest thrusts.

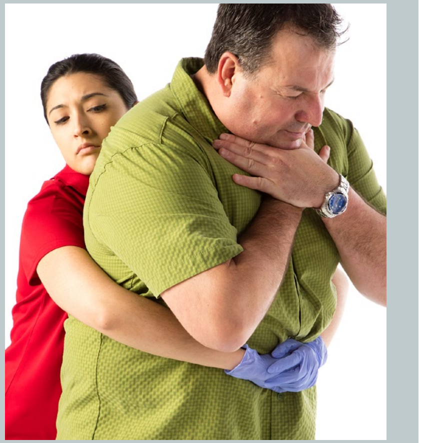
Back Blows

1. Stand behind the person (or kneel, if you are significantly taller) and wrap one arm diagonally across the person's chest.
2. Bend the person forward at the waist.
3. With the heel of your free hand, deliver up to 5 firm back blows between the shoulder blades.



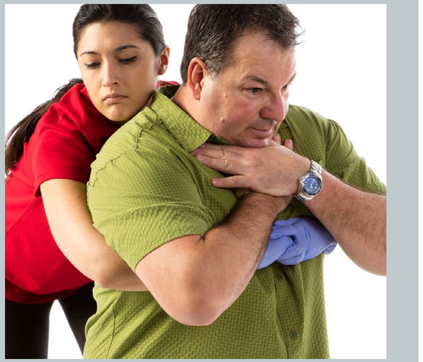
Abdominal Thrusts

1. Stand behind the person and ensure that your stance is stable. If the person is much shorter than you are, it may be more effective to kneel.
2. Wrap your arms around the person's waist, make a fist, and place it just above the belly button.
3. Cover your fist with your other hand and give up to 5 quick, inward and upward thrusts into the person's abdomen.



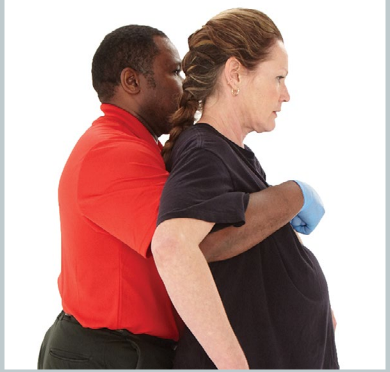
Chest Thrusts

1. Stand behind the person (or kneel, if you are significantly taller) and wrap both of your arms around the person's chest.
2. Make a fist and place it in the middle of the person's chest, with your thumb facing inward, and place your other hand over your fist.
3. Give up to 5 chest thrusts by pulling straight back toward you. If you find your thrusts are not effective, pull more sharply and deeply.



Special Choking Circumstances

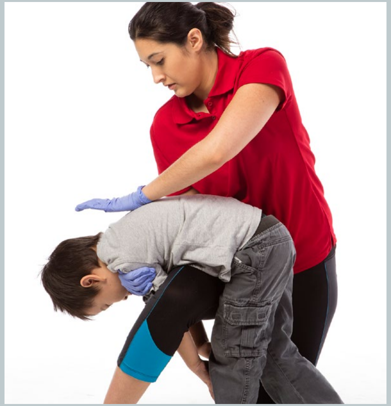
Larger or Pregnant Responsive, Choking Adult



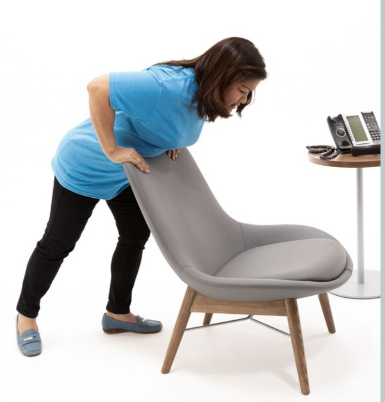
1. If you cannot reach far enough around a person to perform abdominal thrusts, or if you are aiding a person who is obviously pregnant, alternate between 5 firm back blows and 5 chest thrusts.
2. Continue until the object comes out, the person begins to breathe or cough, or the person becomes unresponsive.

Responsive, Choking Toddler

1. If the child is short enough, kneel on the floor with one knee raised.
2. Perform 5 back blows with the child leaning across your raised leg, alternating with either 5 chest thrusts or 5 abdominal thrusts.
3. Continue until the object comes out, the child begins to breathe or cough, or the child becomes unresponsive.



If You Are By Yourself and Choking



1. Dial EMS/9-1-1 and leave the phone off the hook. This will tell the dispatcher to send help.
2. If there are people nearby, move to a place where you can be noticed.
3. Attempt to dislodge the object by performing an abdominal thrust against a safe object with no sharp edges or corners, such as the back of a chair or the edge of a table.

!

Calling EMS/9-1-1 does not always tell the dispatcher your location. Enhanced 9-1-1 services may be able to triangulate your position from a mobile phone call, but it is accurate only to within several hundred metres. If you are using a VOIP system, the location of the call is dependent upon how the system is set up. Additionally, if you call from a landline phone, your exact position within the building will not be pinpointed. While the phone call is important, it is equally important that you move to a public area or a place where you are likely to be seen.

Choking Baby (Less Than 12 Months)

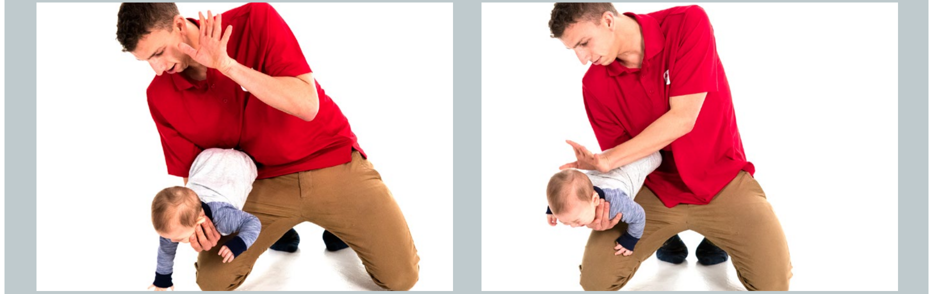
Call

- Shout for help.
- If the baby is making high-pitched noises, is wheezing, can no longer make a sound, or becomes too weak to cough, have someone call EMS/9-1-1 and get an AED while you care for the baby.
- If you are alone, immediately begin care for complete choking. Shout for help to try to attract the attention of a bystander.

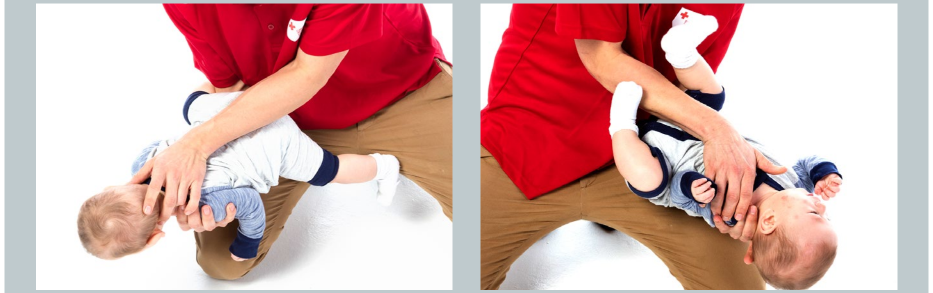
Care

1. Sit or kneel holding the baby.
2. Position the baby face-down along your forearm, holding his or her jaw in your hand.
3. Rest your forearm on your leg so that the baby's head is lower than his or her body.

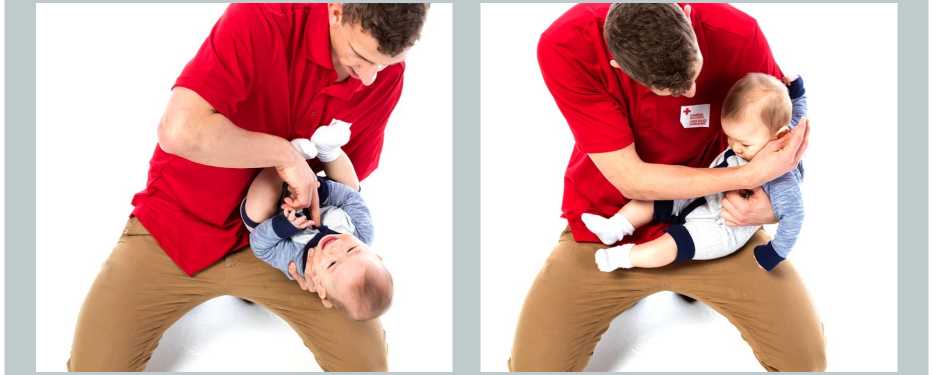
4. Deliver 5 firm back blows between the shoulder blades with the heel of your free hand.



5. If the object has not been dislodged, turn the baby face-up, ensuring you support the head.



6. Place 2 fingers on the middle of the chest just below the nipple line and quickly deliver 5 firm chest compressions, pushing down 1/3 of the chest's depth.
7. Repeat the 5 firm back blows and 5 chest compressions until the object is coughed up, the baby starts to cry, breathe, or cough, or the baby becomes unresponsive.



After the Object Comes Out

An object lodged in the airway can cause damage to the sensitive tissues in the trachea and the back of the throat. This can cause bleeding and swelling.

Always call EMS/9-1-1 and get an AED if a person has experienced complete choking, even if they are no longer choking. If you have done back blows, abdominal thrusts, or chest thrusts, those procedures may have caused damage (in addition to the damage caused by the choking itself), so any person given this care should be assessed in a hospital.

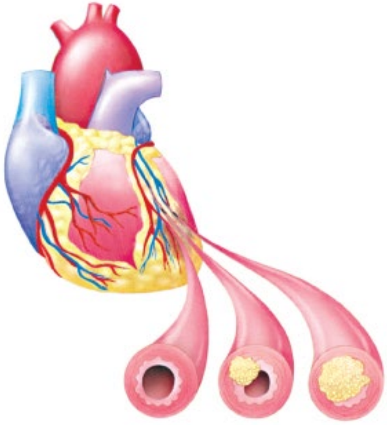
A person who has experienced partial choking should seek medical attention if he or she experiences any kind of respiratory distress after the incident. The person should be monitored for several hours after the incident to ensure that there is no damage: if there is no sign of injury in the first few hours, the person is probably fine.

Unresponsive Choking

If the choking person becomes unresponsive, lower him or her to the ground as safely as possible and immediately begin CPR, starting with chest compressions.

5 Circulation Emergencies

Circulation emergencies are sudden illnesses or injuries involving the heart or the blood vessels. Because every minute counts when a person is experiencing a circulation emergency, the person's survival often depends on First Aiders acting quickly and giving appropriate care until EMS personnel arrive and take over.



Cardiovascular Disease

Cardiovascular disease is an abnormal condition that affects the heart and blood vessels. It is one of the leading causes of death in Canadians, and it is the underlying cause of many circulation emergencies.

Although a circulation emergency such as angina, a heart attack, or a stroke can occur suddenly, the underlying cardiovascular disease often develops over a long period of time. In fact, it can begin as early as the teenage years.

Arteriosclerosis is a cardiovascular disease in which the arteries become hardened and narrowed. The most common type of arteriosclerosis is called atherosclerosis. This damage occurs gradually, as cholesterol and fatty deposits called plaque build up on the inner artery walls. As this buildup worsens, the arteries become narrower, reducing the amount of blood that can flow through them. The narrowing of arteries increases the risk of artery blockages, which can cause angina, heart attacks, transient ischemic attacks (TIAs), and strokes.

Prevention

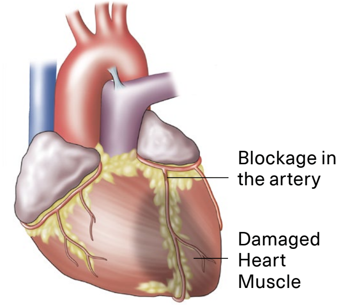
Cardiovascular disease has both controllable and uncontrollable factors. Uncontrollable factors include age, family history, and ethnicity.

Fortunately, many risk factors of cardiovascular disease are the result of lifestyle choices and are therefore within a person's control.

These risk factors include:

- Smoking (including second-hand smoke and smokeless tobacco)
- Cholesterol levels
- High blood pressure
- Stress levels

These risk factors can be reduced by quitting smoking, eating a healthy diet, exercising, and using stress management techniques.



Heart Attack

A heart attack occurs when the heart muscle cannot get enough oxygen because of a blockage in one of the arteries that feeds it.

What to Look For

The signs and symptoms of a heart attack vary from person to person, and can be different in women and men. Even a person who has had a heart attack before may not experience the same signs and symptoms if he or she has a second heart attack.

A person who is having a heart attack may experience chest pain, which can range from mild to unbearable. The person may complain of pressure, squeezing, tightness, aching, or heaviness in the chest. The pain or discomfort is persistent, lasting longer than 3 to 5 minutes. It is not relieved by resting, changing position, or taking medication. It may be difficult to distinguish the pain of a heart attack from the pain of indigestion, heartburn, or a muscle spasm.

Other signs and symptoms of a heart attack include the following:

- Discomfort or pain that spreads to one or both arms, the jaw, the shoulder, the neck, or (more commonly in women) the back or the upper part of the stomach
- Problems breathing (e.g., noisy breathing, shortness of breath, or breathing that is faster than normal)
- Cold, sweaty skin
- Skin, lips, and fingers that are a different colour than usual
- Feelings of anxiety, denial, or impending doom

"Soft Signs" of a Heart Attack

During a heart attack, many females, elderly people, and people with diabetes tend to experience "soft signs," which are milder or more generalized than the "classic" signs and symptoms of a heart attack. These "soft signs" may be experienced for hours, days, or even weeks prior to the heart attack and are often dismissed as nothing out of the ordinary.

"Soft signs" include:

- Mild, unfocused chest discomfort that:
  - Comes and goes
  - Does not necessarily feel painful
  - Gets better with rest and worse with activity, or gets progressively worse
- Extreme fatigue (tiredness)
- Gastric discomfort, nausea, or vomiting
- Flu-like symptoms
- Dizziness or light-headedness

! Not everyone experiences chest pain during a heart attack.

What to Do

Call

If you suspect a person is having a heart attack, call EMS/9-1-1 and get an AED immediately.

Care

1. Have the person rest comfortably.
2. If acetylsalicylic acid (ASA) is available, encourage the person to chew 160 to 325 mg (either 1 adult-dose or 2 low-dose ASA tablets), unless the person has an allergy or a contraindication to ASA, such as a bleeding disorder. Ensure that the person thoroughly chews and swallows the ASA. Do not repeat the dosage.
3. If the person takes a prescribed medication to relieve chest pain (e.g., nitroglycerin), offer to locate the medication and help the person to take it.
    - If the person has nitroglycerin in a spray or pill form, ensure that the person sprays or places the nitroglycerin under his or her tongue.
4. Reassure the person. Anxiety may increase the person's discomfort.

!

Other painkilling medications such as acetaminophen (e.g., Tylenol®) or ibuprofen (e.g., Advil®) do not have the same effect as ASA in reducing damage due to heart attacks. Do not substitute ASA with acetaminophen or ibuprofen.

If given in conjunction with nitroglycerin, erectile dysfunction drugs can cause blood pressure to lower to a life-threatening level. If the person has recently taken an erectile dysfunction drug (in the previous 24 to 48 hours), advise the person not to take nitroglycerin.

Angina

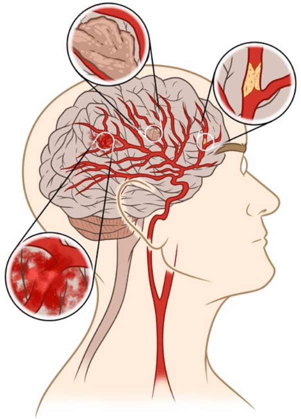
Angina occurs when the heart requires more oxygen than it is receiving. This occurs when two factors are combined: 1) the arteries are narrowed by cardiovascular disease, reducing blood flow; and 2) the heart's oxygen needs are elevated (e.g., during times of physical activity or emotional stress). Angina causes a painful squeezing, suffocating, or burning feeling in the chest.

Uncontrolled high blood pressure, anemia, and certain heart disorders can all contribute to a person's risk of angina.

The signs and symptoms of angina are similar to the signs and symptoms of a heart attack, but the pain is usually triggered by physical activity or stress, goes away if the person rests, and is often relieved by medication (e.g., nitroglycerin). Because it is not possible for First Aiders to distinguish between angina and a heart attack, you should treat a person with angina as you would treat a person having a heart attack.

Stroke

A stroke happens when the blood flow to part of the brain is interrupted, resulting in the death of brain cells. Strokes can cause permanent brain damage, but with quick action, the damage can sometimes be stopped or reversed. Although strokes are most common in older adults, a person of any age, even a child, can have a stroke.



Strokes can happen because of ruptured aneurysms, blood clots, and brain tumours.

Causes of Stroke

Ruptured Aneurysm

A hemorrhagic stroke occurs when a brain aneurysm ruptures. A brain aneurysm is a swollen, fragile section in the wall of an artery that carries blood to the brain. When it ruptures, it causes bleeding in the surrounding brain tissues, killing the nearby brain cells and causing a stroke.

As an unruptured brain aneurysm usually has no signs or symptoms, it can go undetected. However, an unruptured brain aneurysm may press against areas in the brain and, depending on the severity of the aneurysm and its location, it can cause signs and symptoms such as neck pain, acute headaches, blurred vision, and changes in speech.

Blood Clot

An ischemic stroke occurs when a clot becomes lodged in an artery of the brain, usually because the artery has been narrowed by cardiovascular disease. The blockage prevents blood from reaching the brain cells it usually supplies.

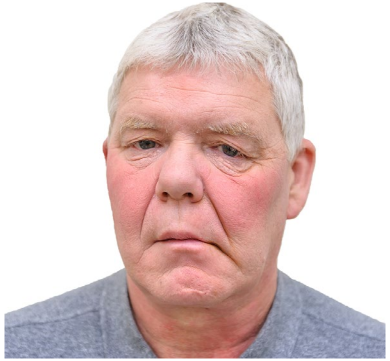
Brain Tumour

A stroke can also occur when a tumour in the brain presses on an artery. The tumour has a similar effect to a blood clot, resulting in decreased blood flow or a complete blockage of blood flow to part of the brain.

Prevention

Because the risk factors for stroke are similar to those for heart disease, the risk of a stroke can be reduced by following the same lifestyle changes discussed for preventing cardiovascular disease.

What to Look For



The signs and symptoms of strokes can vary from person to person. A person who is having a stroke may suddenly develop one or more of the following signs and symptoms:

- A sudden, severe headache
- Dizziness or confusion
- Unresponsiveness or temporary loss of responsiveness
- Sudden loss of bladder or bowel control
- Vision problems in one or both eyes

FAST

When trying to determine if a person is having a stroke, remember the acronym FAST:

F **Face —** Facial numbness or weakness, especially on one side.

A **Arm —** Arm numbness or weakness, especially on one side.

S **Speech —** Abnormal speech, difficulty speaking or understanding others, or a loss of speech.

T **Time —** Time is important; call EMS/9-1-1 immediately.

To assess the person using FAST:

- **Face:** Ask the person to smile while you look at their mouth. If their smile is crooked and one corner of their mouth is drooping, they may be having a stroke.
- **Arm:** Ask the person to close their eyes, put both arms out in front of them, and face their palms upwards. If one of their arms is sagging or drifting compared to the other, they may be having a stroke.
- **Speech:** Ask the person or the people that they are with if they have noticed any changes in their speech, which may indicate a stroke.
- **Time:** Speak to the person and those around them to try and find out when the symptoms started. Call EMS/9-1-1 immediately.

What to Do

Call

Call EMS/9-1-1 and get an AED.

Care

1. Have the person rest in a comfortable position. If the person prefers to lie down, or is unresponsive, drooling, or having trouble swallowing, place the person in the recovery position.
2. Note when the signs and symptoms first started (or, if you do not know when the signs and symptoms started, note the last time the person was known to be well).
3. Monitor the person's condition and provide reassurance until EMS personnel arrive; a stroke can be an extremely frightening experience.

! Some of the medications used to treat strokes can only be administered within a short window of time after the onset of signs and symptoms. It is crucial to note when the person first began to experience the signs and symptoms, or the last time the person was known to be well.

Transient Ischemic Attack (TIA)

A transient ischemic attack (TIA) is also referred to as a "mini-stroke" and is caused by a temporary drop in blood flow to part of the brain. A TIA may be caused by a tumour or a clot in an artery in the brain. The signs and symptoms of a TIA are the same as the signs and symptoms of a stroke, but they disappear within a few minutes or hours.

A person who has had a TIA is at a very high risk of having a stroke in the near future. In fact, more than 10% of people who have a TIA will have a stroke within 3 months, with half of these strokes happening within 48 hours of the TIA.

Life-Threatening Bleeding

Life-threatening bleeding refers to a situation where large amounts of blood loss occur either externally (outside the body) or internally (within the body). Life-threatening bleeding can occur whenever one or more of the body's blood vessels are broken. It must be controlled immediately.

Bleeding from arteries (arterial bleeding) is often rapid and profuse, and it is always life-threatening. This is because arterial blood is under direct pressure from the heart, so it usually spurts from the wound, making it difficult for clots to form. As a result, arterial bleeding is harder to control than bleeding from veins and capillaries.

Veins are damaged more often than arteries because they are closer to the skin's surface. Bleeding from veins (venous bleeding) is easier to control than arterial bleeding. Venous blood is under less pressure than arterial blood and flows from the wound at a steady rate without spurting. Only damage to veins deep in the body, such as those in the torso or thigh, produces profuse bleeding that is hard to control.

Prevention

The following precautions may reduce the likelihood of an injury that causes life-threatening bleeding:

- Be familiar with your surroundings.
- Keep all sharp objects, such as knives, in a safe place.
- Get proper training on machinery in the workplace.
- Always follow the outlined safety procedures when operating equipment.
- Wear and use appropriate safety equipment at work and at home.
- Only use equipment for its intended purpose.
- Stay alert when operating equipment.

Life-Threatening External Bleeding

What to Look For

The signs and symptoms of life-threatening external bleeding include:

- Blood spurting or flowing freely from a wound
- Blood that fails to clot after you have taken all measures to control bleeding
- Large amounts of blood loss

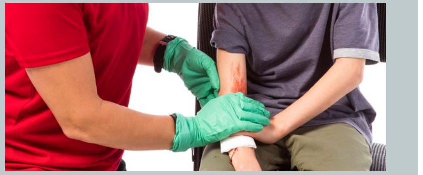
What to Do

Call

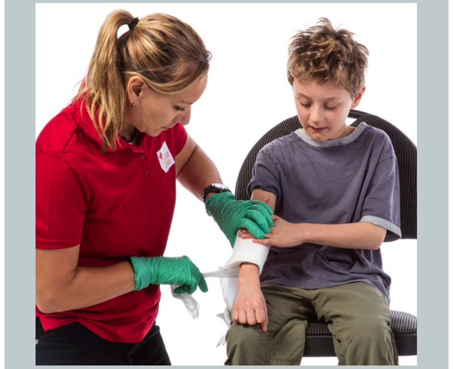
Call EMS/9-1-1 and get an AED.

Care

1. Expose the wound.
2. Apply firm and direct pressure to the wound.



3. While maintaining direct pressure, apply a dressing and bandage, and then secure them in place.



4. Reassess the wound to see if the pressure has stopped the bleeding. If not, consider using a tourniquet if the wound is on a limb.

Using a Tourniquet

A tourniquet is a tight band placed around an extremity (e.g., an arm or leg). It constricts blood vessels to stop life-threatening bleeding in circumstances where normal bleeding control is impossible or ineffective.

Tourniquets are commercially made, but they can also be improvised with any wide strip of material (e.g., a triangular bandage). If you find yourself in a situation where you need to apply a tourniquet, a commercially manufactured tourniquet is preferred over an improvised device. Follow the manufacturer's instructions for applying the tourniquet. Although tourniquets may have slightly different designs, all are applied in generally the same way. Once a tourniquet is in place, you should not remove it for any reason.

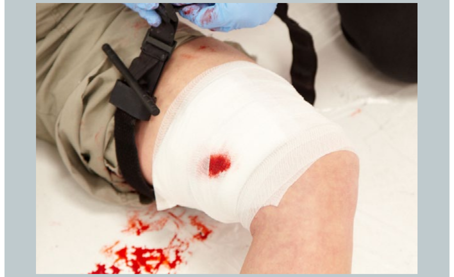
When to Apply a Tourniquet

Using a tourniquet involves a level of risk, which must be balanced against the potential benefits. You should only apply a tourniquet in the following situations:

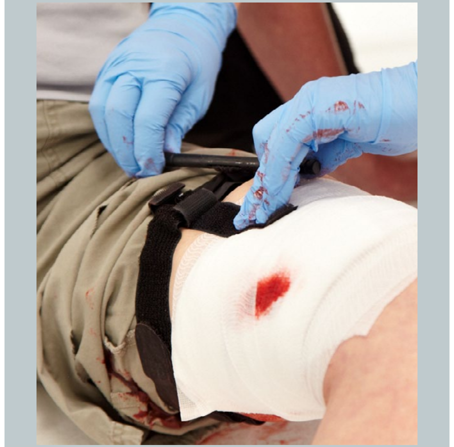
- The person has life-threatening external bleeding that cannot be controlled using direct pressure.
- The person is in a physical location that makes it impossible to apply direct pressure (e.g., the person or the person's injured limb is trapped in a confined space).
- You must move the person and are unable to maintain direct pressure while doing so.

Applying a Tourniquet

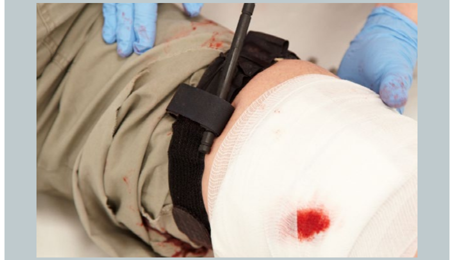
1. Apply the tourniquet 5 to 10 cm (2 to 4 in.) above the injury. If there is a joint in this range, apply the tourniquet above it, at least 2.5 cm (1 in.) away from the joint.



2. Tighten the tourniquet until the bleeding stops.



3. Secure the tourniquet in place.



4. Document the time the tourniquet was tightened.

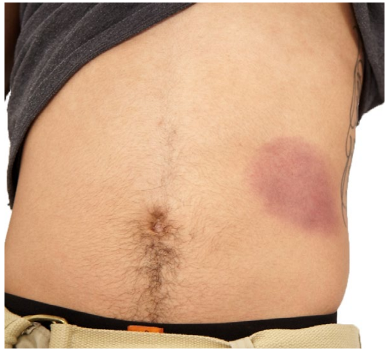
Using Hemostatic Dressings

A hemostatic dressing is a dressing treated with a substance that speeds clot formation. As is the case with tourniquets, hemostatic dressings are used in cases of life-threatening bleeding where standard first aid procedures fail or are not practical. Typically, hemostatic dressings are used on parts of the body where a tourniquet cannot be applied, such as the neck or torso. A hemostatic dressing can also be used to control bleeding from an open wound on an arm or a leg if a tourniquet is ineffective. The hemostatic dressing is applied at the site of the bleeding (possibly inside the wound) and is used along with direct pressure.

Life-Threatening Internal Bleeding

Internal bleeding is the escape of blood from arteries, veins, or capillaries into spaces in the body. Life-threatening internal bleeding usually occurs in injuries caused by a violent blunt force, such as when someone falls from a height. You should suspect internal bleeding after any injury that involved a forceful blow to the body. Internal bleeding may also occur when a sharp object, such as a knife, penetrates the skin and damages internal structures.

What to Look For



Signs and symptoms of life-threatening internal bleeding include the following:

- Bruising in the injured area
- Soft tissues (e.g., the abdomen) that are tender, swollen, or hard
- Blood in saliva or vomit
- Pain
- Severe thirst, nausea, and vomiting
- Anxiety

What to Do

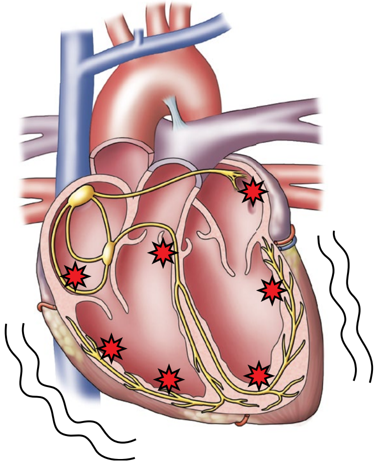
Call

Call EMS/9-1-1 and get an AED. You cannot provide first aid for life-threatening internal bleeding as a First Aider. Life-threatening internal bleeding, especially if it results from damage to an organ, requires in-hospital medical intervention. Help the injured person rest in the most comfortable position and provide continual care while waiting for EMS personnel.

> **!** A person with life-threatening internal bleeding may be very thirsty, but giving anything by mouth (even water) can cause serious complications.

6 CPR and AED

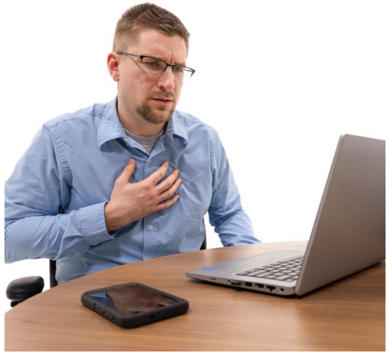
CPR, or cardiopulmonary resuscitation, is a skill that is used when a person is in cardiac arrest. CPR involves giving sets of 30 chest compressions followed by sets of 2 rescue breaths; it keeps oxygenated blood moving to the brain and other vital organs until advanced medical help arrives. Because we breathe in 21% oxygen and breathe out 16%, even exhaled breath has more than enough oxygen to sustain life.



Cardiac Arrest

Cardiac arrest occurs when the heart stops beating or beats too ineffectively to circulate blood to the brain and other vital organs. Under normal circumstances, a network of special cells in the heart muscle conducts electrical impulses that coordinate contractions, causing the heart to beat rhythmically. In cardiac arrest, the electrical impulses become abnormal and chaotic. This causes the heart to lose the ability to beat rhythmically, or to stop beating altogether.

The respiratory and circulatory systems are very closely linked. After breathing stops, it is not long before the heart stops. This is especially true in children: pediatric cardiac arrests are often the result of airway or breathing emergencies.



Sudden Cardiac Arrest

Cardiac arrest can happen suddenly and without any warning signs; this is called sudden cardiac arrest. People who have a history of cardiovascular disease or a congenital heart disorder are at higher risk for sudden cardiac arrest. However, sudden cardiac arrest can happen in people who appear healthy and have no known heart disease or other risk factors for the condition. A person who experiences sudden cardiac arrest is unlikely to survive without immediate care.

Clinical and Biological Death

Clinical death occurs when breathing stops and the heart stops beating. A person without a heartbeat is clinically dead. Because permanent brain damage does not begin for 4 to 6 minutes, clinical death is reversible with immediate care and intervention.

Biological death occurs when the brain becomes irreversibly damaged, which occurs after about 8 to 10 minutes without oxygen. This is also called "brain death."

Common Causes

Cardiovascular disease is the most common cause of cardiac arrest. Other common causes include the following:

- Drowning
- Severe blood loss
- Suffocation or complete choking
- Electrocution
- Drug poisoning
- Severe chest injuries
- Commotio cordis
- Other heart diseases and abnormalities

Cardiovascular disease and certain congenital heart conditions (i.e., conditions that a person is born with) can increase the risk of cardiac arrest. Breathing emergencies can also lead to cardiac arrest. For example, choking or drowning can interrupt the body's supply of oxygen, causing the heart to stop beating. Every organ in the body needs a steady supply of oxygen in order to work properly, and the heart is no exception. Severe trauma, electrical shocks, and drug poisonings are other potential causes of cardiac arrest. Although cardiac arrest is more common in adults, it does occur in young people as well. The most common causes of cardiac arrest in children and babies are breathing emergencies, congenital heart disorders, and trauma.

Cardiac arrest is a life-threatening condition, so starting CPR is the top priority. A person in cardiac arrest may have other conditions as well, such as a possible head, neck, or spinal injury, but caring for other injuries is lower priority than starting CPR and getting an AED.

Sudden Infant Death Syndrome

Sudden infant death syndrome (SIDS) is the sudden death of an apparently healthy baby. It usually occurs while the baby is sleeping.

If you find a baby who is unresponsive and not breathing, start CPR immediately. The causes of SIDS are unknown, but the following prevention tips are believed to be helpful:

- Always put a baby to sleep on their back.
- Don't put pillows or more than one thin blanket in a sleeping baby's crib.
- Ensure that no one smokes around a baby.

What to Look For

When a person experiences cardiac arrest, signs and symptoms may include the following:

- The person suddenly collapses.
- The person is unresponsive and not breathing, or is unresponsive and not breathing normally.

! For each minute that CPR and use of an AED are delayed, the person's chance of survival is reduced by about 10%.

Cardiac Arrest, Adult (After the Onset of Puberty)

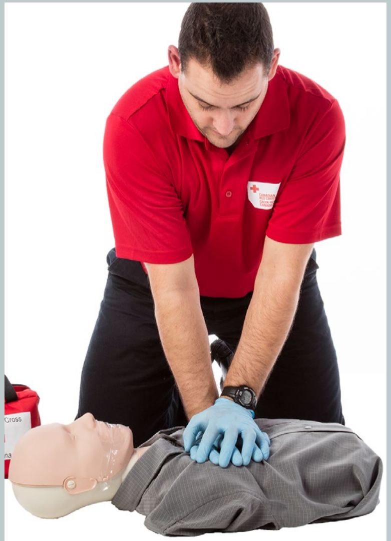
What to Do

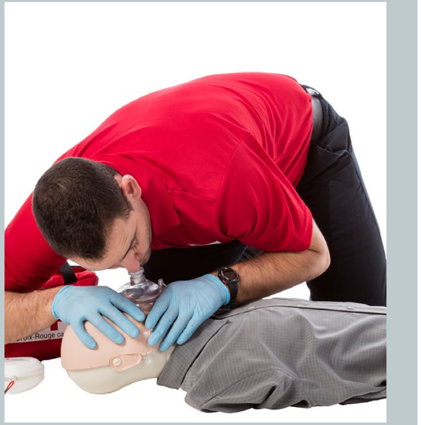
Call

Have someone call EMS/9-1-1 and get an AED. If you are alone with an adult, call EMS/9-1-1 yourself, get an AED, and then return to care for the person.

Care

1. Do 30 compressions:
   - Place both of your hands on the centre of the person's chest.
   - Push down at least 5 cm (about 2 in.), pushing deeply and steadily.
   - Allow the chest to fully recoil after each compression (do not lean on the chest).
   - The chest compression rate should be between 100 and 120 beats per minute (30 compressions in 15 to 18 seconds).
2. Give 2 rescue breaths:
   - Open the airway by doing a head-tilt/chin-lift.
   - Place your barrier device over the person's mouth and nose.
   - If using a plastic face shield, seal your lips tightly over the person's mouth and pinch the nose. If using a face mask, ensure it is fitted tightly over the mouth and nose.
   - Give 2 rescue breaths. Each breath should last 1 second, with just enough volume to make the chest start to rise.
3. If both breaths go in, repeat the cycle of 30 compressions and 2 breaths.





! If there are two First Aiders present, they can alternate every 5 cycles (about every 2 minutes) or perform two-person CPR.

Cardiac Arrest, Child (1 Year to the Onset of Puberty)

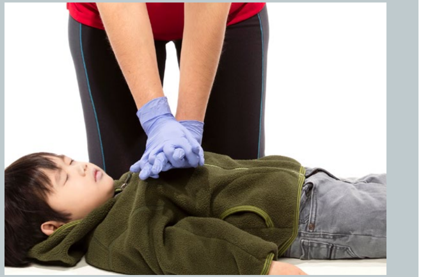
What to Do

Call

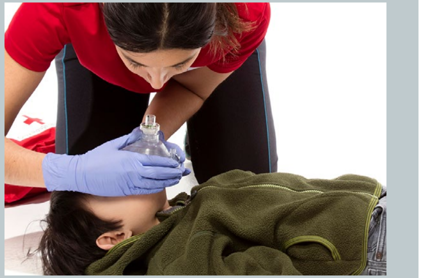
Have someone call EMS/9-1-1 and get an AED. If you are alone with the child and are not in close proximity to a phone, do 5 cycles (2 minutes) of CPR before calling EMS/9-1-1. Take the child with you to call EMS/9-1-1 and get an AED, and then continue to provide care.

Care

1. Do 30 compressions:
    - Put 1 or 2 hands on the centre of the child's chest.
    - Push down at least 1/3 of the chest's depth, pushing deeply and steadily.
    - The chest compression rate should be between 100 and 120 beats per minute (30 compressions in 15 to 18 seconds).
    - Allow the chest to fully recoil after each compression (do not lean on the chest).



2. Give 2 breaths:
    - Open the airway by doing a head-tilt/chin-lift.
    - Place your barrier device over the child's mouth and nose.
    - If using a plastic face shield, seal your lips tightly over the child's mouth and pinch the nose. If using a face mask, ensure it is fitted tightly over the mouth and nose.
    - Give 2 breaths. Each breath should last 1 second, with just enough volume to make the chest start to rise.



3. If both breaths go in, repeat the cycle of 30 compressions and 2 breaths.

Cardiac Arrest, Baby (Less Than 12 Months)

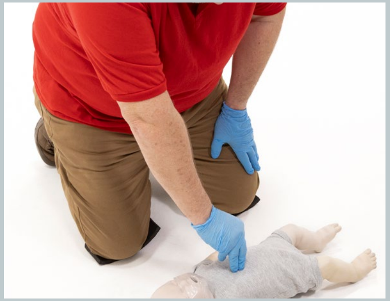
What to Do

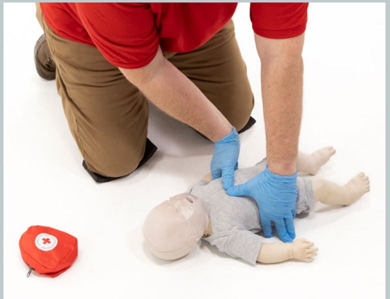
Call

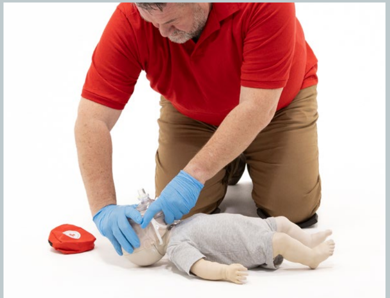
Have someone call EMS/9-1-1 and get an AED. If you are alone with the baby and are not in close proximity to a phone, do 5 cycles (2 minutes) of CPR before calling EMS/9-1-1. Take the baby with you to call EMS/9-1-1 and get an AED, and then continue to provide care.

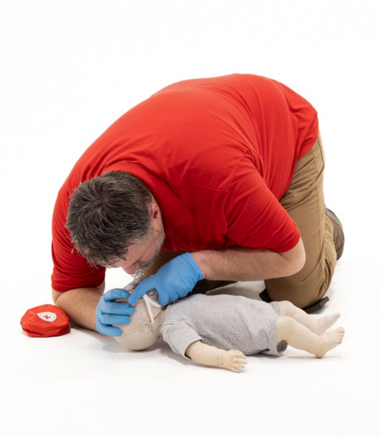
Care

1. Do 30 compressions:
    - Put 2 fingers on the middle of the baby's chest, or put your hands around the baby with both thumbs on the middle of the baby's chest.
    - Push down at least 1/3 of the chest's depth, pushing deeply and pushing steadily.
    - The chest compression rate should be between 100 and 120 beats per minute (30 compressions in 15 to 18 seconds).
    - Allow the chest to fully recoil after each compression (do not lean on the chest).
2. Give 2 breaths:
    - Open the airway by doing a head-tilt/chin-lift.
    - Place your barrier device over the baby's mouth and nose.
    - If using a plastic face shield, seal your lips tightly over the baby's mouth and nose. If using a face mask, ensure it is fitted tightly over the mouth and nose.
    - Give 2 breaths. Each breath should last 1 second, with just enough volume to make the chest start to rise.
3. If both breaths go in, repeat the cycle of 30 compressions and 2 breaths.









Continue CPR Until...

Once you begin CPR, continue giving sets of 30 chest compressions and 2 rescue breaths until:

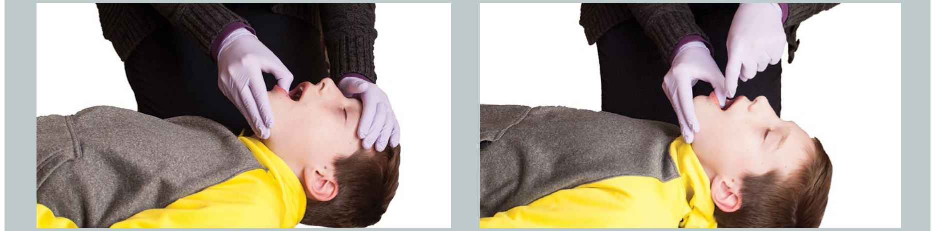
- EMS personnel take over.
- An AED is available and there is no one else who can apply the pads to the person's chest.
- Another trained First Aider is available and can take over compressions.
- You have performed approximately 2 minutes of CPR for a child or baby (5 sets of 30 chest compressions and 2 rescue breaths) and you need to call EMS/9-1-1.
- You are alone and too tired to continue.
- The scene becomes unsafe.
- You notice an obvious sign of life (e.g., movement, opening their eyes, normal breathing). If the person shows an obvious sign of life, stop CPR and check the person's ABCs. If the person is breathing, place him or her in the recovery position, and continue to monitor the person's condition until EMS personnel take over.

What to Do If the Rescue Breaths Don't Go In

If the chest does not rise after the first breath:

1. Reposition the head to adjust the airway, and attempt to give another breath.
2. If the second breath does not go in, begin the CPR sequence again (30 chest compressions).

3. After the 30 chest compressions, look in the person's mouth. If you see an object, carefully remove it:
    - With one hand, grasp the lower jaw and tongue (if possible) while opening the mouth.
    - Place one finger from your other hand into the side of the person's mouth, then sweep beside the object or grab it to lift it out.



4. After looking in the mouth (even if nothing is visible) open the airway and attempt to give a breath:
    - If the breath goes in, give a second breath.
    - If the breath does not go in, resume the CPR sequence (starting with 30 chest compressions).

5. Continue to give CPR. After each set of compressions and before attempting to give rescue breaths, look for an object in the person's mouth and remove it if possible.

Compression-Only CPR

Compression-only CPR uses chest compressions (without rescue breaths) to pump the heart and circulate oxygen that is already in the person's body. If you are unwilling or unable to give rescue breaths for any reason (e.g., you do not have a barrier device or the ill or injured person has facial trauma), compression-only CPR is acceptable. As a minimum, you should always perform compression-only CPR for any person in cardiac arrest. You are encouraged to perform traditional CPR (compressions with rescue breaths) whenever possible.

Compression-only CPR is always better than no care, and can be effective. However, if you are caring for a child, a baby, or any person who entered cardiac arrest because of a respiratory problem (e.g., choking, drowning, anaphylaxis, asphyxiation), the person may not have much oxygen remaining in his or her blood, and circulating deoxygenated blood is not very useful. In these circumstances, traditional CPR with rescue breaths is the recommended method of care.

Maximizing CPR Efficiency

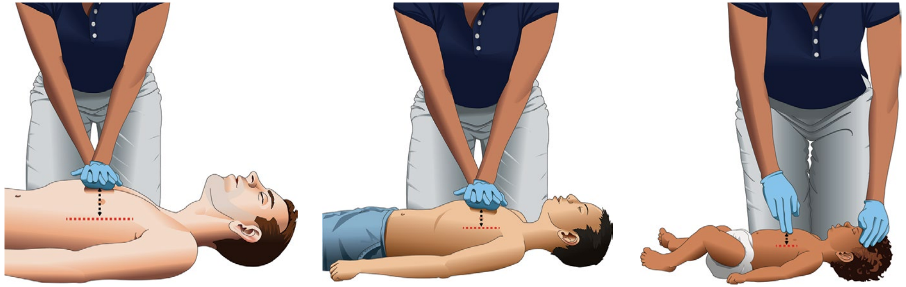
CPR Compression Depth for an Adult

When providing CPR to an adult, you should perform compressions in the middle of the chest on the lower half of the sternum. Push deeply and push steadily, ensuring a compression depth of at least 5 cm (about 2 in.), while avoiding excessive depths greater than 6 cm (about 2.5 in.). While there is a risk of injury with compression depths greater than 6 cm, these injuries tend to be non-life-threatening. It is more important to push deeply and push steadily than to worry about pushing too deeply.

CPR Compression Depth for a Child or a Baby

Because of the variation in size among children or babies, compression depth for this age group is measured as a fraction of the total chest depth, not in centimetres. When providing CPR to a child or baby (i.e., a person who has not yet reached puberty), you should perform chest compressions on the lower half of the sternum and depress the chest to at least 1/3 of its depth. Ideally, chest compressions should be at the upper limit of 1/2 of the front-to-back depth.

CPR compression depths may be impacted by items such as heavy clothing (e.g., a winter coat or motorcycle jacket) or sports equipment. You should not delay starting CPR to remove them, but you may have to push harder to ensure that the minimum chest compression depth is reached.

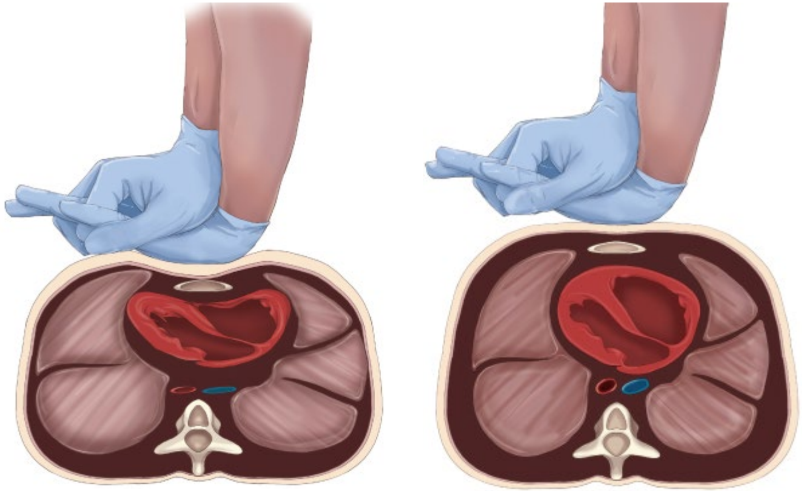


Chest Compression Rates

First Aiders should perform chest compressions at a rate of 100 to 120 beats per minute. Counting out loud as you give compressions can help you to keep a steady, even rhythm that allows time for adequate chest recoil.

Chest Recoil

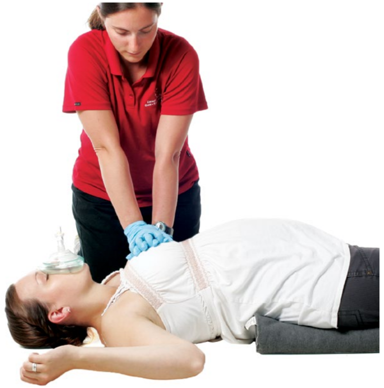
You should avoid leaning on the person's chest wall in between compressions. Instead, ensure that the chest recoils fully. It is during recoil that the coronary arteries of the heart are filled with blood and the heart muscle gets oxygen. If you are leaning on the person's chest between compressions, the coronary arteries will not get sufficient blood flow and heart death can occur. Remember: Compression is for the brain, recoil is for the heart.



Decreasing Compression Fraction (Off-Chest Time)

During CPR, you should minimize interruptions to chest compressions. Any interruption decreases the total number of compressions given, and therefore the amount of blood that is circulated. Compressions also build up pressure in the person's arteries: when compressions are interrupted, the arterial pressure drops, which means that the first compressions you give after the interruption are rebuilding the pressure and not yet circulating blood effectively.

Interruptions should be limited to critical interventions, such as applying AED pads to the person, allowing the AED to analyze or administer a shock, and clearing the airway. Pause to reassess the person's ABCs only if there has been an obvious change in the person's condition. Lengthy ventilation steps (opening airway, excessive breathing) should be avoided. There is no need for you to reposition your hands after every compression—the hand is placed on the middle of chest.



Special Considerations

CPR for a Pregnant Person

When performing CPR for a pregnant person, raising their right hip 7.5 to 10 cm (3 to 4 in.) will help blood return to the heart. If a bystander is available (or an appropriate object is within easy reach), ask the person to find a soft object that you can place under the woman's hip, but do not interrupt or delay starting CPR to find an object yourself.

Air in the Stomach

When giving rescue breaths, it is important to keep the person's head tilted back and breathe with just enough force to cause the chest to rise. Failing to tilt the head back, giving too much air in one breath, or blowing too forcefully can push air into the person's stomach instead of into his or her lungs.

Air in the stomach can make someone vomit. When an unresponsive person vomits, the stomach contents may get into the lungs—this is called aspiration. Aspiration makes giving rescue breaths more difficult and reduces the person's chance of successful resuscitation. To prevent aspiration, remember to give breaths only until the chest starts to rise.

Vomiting

In some situations a person may vomit while you are giving CPR. If this happens:

1. Turn the person onto his or her side, facing you.
2. Quickly wipe the person's mouth clean.
3. Reposition the person on his or her back and continue with CPR.

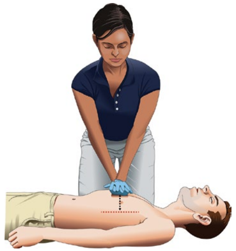
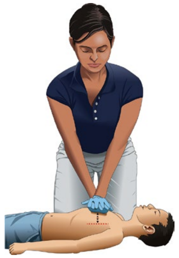
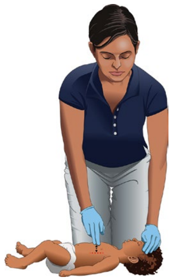
Mouth-to-Nose Breathing

Sometimes you cannot seal your mouth over the person's mouth to give rescue breaths because:

- The person's jaw or mouth is injured.
- The person's jaw or mouth is shut too tightly to open.
- Your mouth is too small to cover the person's mouth.
- The person has blood coming out of his or her mouth.

If this happens, tilt the person's head as usual using a head-tilt/chin-lift and breathe into the person's nose. Block or close the mouth with your hand to stop air from escaping.

CPR Summary

	Hand Position	Compress	Breathe	Cycle	Compression Rate
Adult 	Two hands on the middle of the chest	At least 5 cm (about 2 in.)	Just enough volume to make the chest start to rise (1 second per breath)	30 compressions and 2 breaths	Rate of 100–120 per minute: 30 compressions in about 15–18 seconds.
Child 	One or two hands on the middle of the chest	At least 1/3 of the chest's depth	Just enough volume to make the chest start to rise (1 second per breath)	30 compressions and 2 breaths	Rate of 100–120 per minute: 30 compressions in about 15–18 seconds.
Baby 	Two fingers on the middle of the chest OR Two hands around the baby with thumbs on the middle of the chest	At least 1/3 of the chest's depth	Gently, with just enough volume to make the chest start to rise (1 second per breath)	30 compressions and 2 breaths	Rate of 100–120 per minute: 30 compressions in about 15–18 seconds.

Automated External Defibrillation

While CPR can help prevent brain damage and death by keeping oxygenated blood moving throughout the body, an automated external defibrillator (AED) can correct the underlying problem for some people who go into sudden cardiac arrest.

Some types of irregular heart rhythms can be helped with a shock, while others cannot. An AED can tell which type of rhythm the person is experiencing, and it will only deliver a shock if the person needs it.

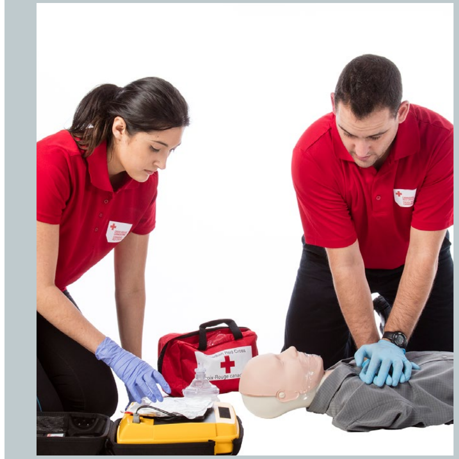
Different types of AEDs are available, but all are similar to operate and guide you using visual displays, voice prompts, or both. If your place of employment has an AED on site, know where it is located, how to operate it, and what the procedures around it are (e.g., for reporting its use or replacing its batteries). Also take note of the location of AEDs in public places that you frequent, such as shopping centres, airports, recreation centres, and sports arenas.

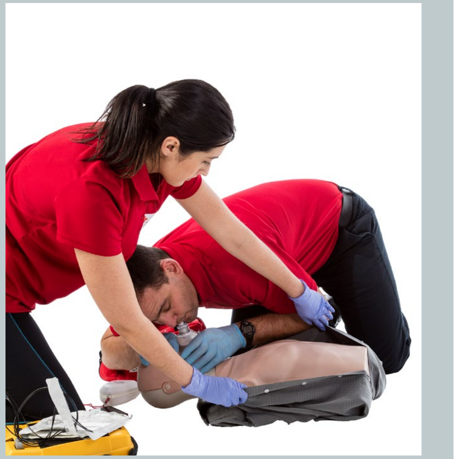
In more than 80% of all sudden cardiac deaths, the person's heart rhythm is "shockable". In other words, defibrillation could have helped. If the person's heart has no electrical activity, defibrillation won't help. For each minute that the person has to wait for defibrillation, the chance of survival drops between 7 and 10%.

Using an AED

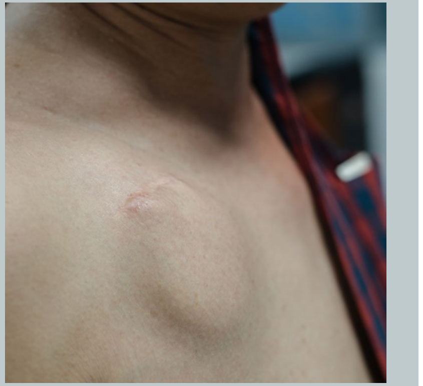
1. Open and turn on the AED.

2. Prepare to apply the AED pads:
   - Remove or cut away clothing and undergarments to expose the person's chest, and move or remove any objects that could come into contact with the pads.
   - If the person's chest is wet, dry it using a towel or gauze pad. Dry skin helps the AED pads to stick properly.
   - Small amounts of chest hair will not interfere with pad adhesion. If the person has thick chest hair, shave the areas where the pads will be placed using the razor included with the AED prep kit.

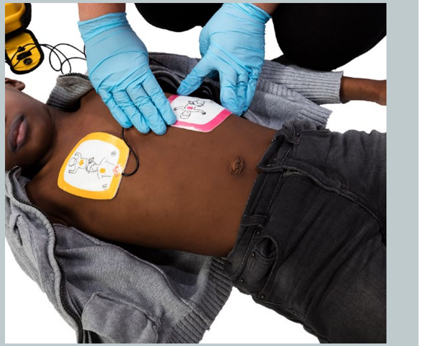




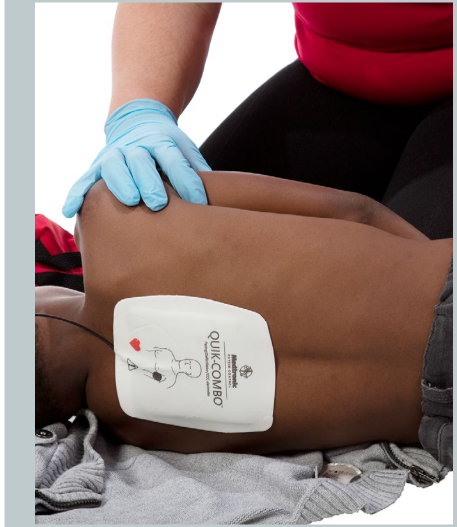
3. Check if the person has an implanted pacemaker:
    - Look on the chest for a small scar and a lump about the size of a matchbox.
    - Apply the AED pads approximately 2.5 cm (1 in.) away from the pacemaker.

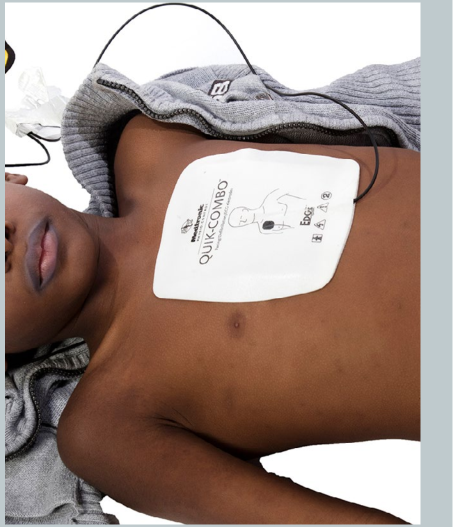


4. Apply the AED pads:
    - Use the appropriate size of pads—adult, child, or baby.
    - A child is considered to be anyone between 1 year old and the onset of puberty. If child AED pads are unavailable, use adult pads.

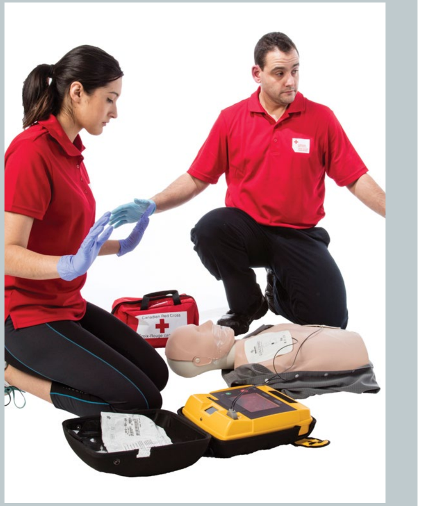


- A baby is considered to be 1 year old or less. If baby AED pads are unavailable, use child or adult pads.
- Follow the diagrams on the pads to position them correctly on the person.
- Pads must be placed at least 2.5 cm (1 in.) apart. If there is not enough space on the chest to leave 2.5 cm (1 in.) between the pads, place one pad on the person's chest (anterior) and one on the person's back (posterior).

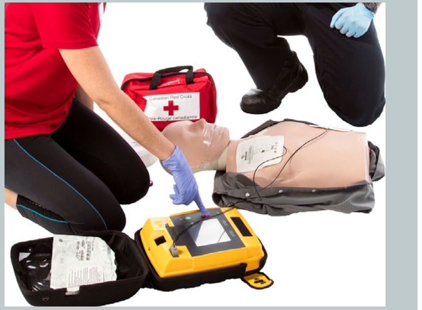




5. Follow the AED's prompts to "Analyze Heart Rhythm":
    - Most AEDs will begin to analyze the heart rhythm automatically, but some may require you to push an "analyze" button to start this process.
    - No one should touch the person while the AED is analyzing the heart rhythm because this could result in a faulty reading.



6. If the AED prompts you to do so, deliver the shock:
    - Stand clear and say, "I'm clear, you're clear, everybody's clear."
    - Ensure that no one is touching the person (as they can be shocked too), then press the "shock" button.



7. After a shock is delivered (or if the AED determines that no shock is necessary), immediately resume CPR, starting with compressions.
8. Continue to follow the AED's automated prompts.

The AED will continue to check the heart rhythm every 2 minutes. Listen for prompts from the AED and continue giving CPR and using the AED until you notice an obvious sign of life or EMS personnel arrive. If you notice an obvious sign of life, stop CPR, but leave the AED turned on and the pads in place on the person's chest. Continue to follow the AED's prompts.

Considerations for Safe and Effective AED Use

Environmental Considerations

Flammable or combustible materials: Do not use an AED around flammable or combustible materials, such as gasoline or free-flowing oxygen.

Metal surfaces: It is safe to use an AED when the person is lying on a metal surface, as long as the AED pads do not touch the metal.

Water: If the person is in water, remove him or her from the water before using the AED. Remember that many liquids conduct electricity: if the person is lying in a puddle when the shock is delivered, anyone who is touching the same puddle is at risk of being shocked as well. It is safe to use an AED on ice or snow.

Inclement weather: It is safe to use AEDs in all weather conditions, including rain and snow, but their effectiveness can be reduced if the pads are wet. Provide a dry environment if possible (for example, shelter the person with umbrellas), but do not delay defibrillation to do so. An AED is designed to function in a range of weather conditions, but it is still a battery-operated electronic device, and excessive cold, heat, moisture, etc., can result in maintenance errors or prevent the pads from adhering properly. If this happens, move the person into a different environment, if possible, before attempting defibrillation again.

Person-Specific Considerations

Pregnancy: It is safe to use an AED on a person who is pregnant.

Pacemakers and implantable cardioverter-defibrillators (ICDs): A person who has a known arrhythmia (irregular heartbeat) may have a pacemaker or an ICD. These small devices are surgically implanted under the skin to automatically prevent or correct an irregular heartbeat. You may be able to see or feel the outline of the pacemaker or ICD in the area below the person's collarbone, or the person may wear a medical identification product indicating that he or she has a pacemaker or ICD. If the person has a pacemaker or ICD, adjust the pad placement to avoid placing the AED pads directly over the device, as this can interfere with the delivery of the shock. If you are not sure whether the person has an implanted device, place the pads as you normally would.

Transdermal medication patches: Some types of medications, including nitroglycerin and smoking cessation medications, are delivered through patches applied to the skin. Remove any medication patches that you see before applying AED pads. Wear gloves to prevent absorption of the drug through your own skin.

Chest hair: Time is critical in a cardiac arrest situation and sparse chest hair rarely interferes with pad adhesion. In most cases, you should proceed as you normally would—attach the AED pads, pressing firmly to ensure adhesion. However, if the person has a great deal of thick chest hair and it seems like it could interfere with pad-to-skin contact, quickly shave the areas where the pads will be placed and then attach the pads. Do not remove the person's chest hair by using the pads like wax strips.

Jewellery and body piercings: You do not need to remove the person's jewellery or body piercings before using an AED. If making a small adjustment to pad placement allows you to avoid the jewellery then do so, but if you must move the pads significantly it is better to place the pads directly over the jewellery.

Using an AED on a Child or Baby

The procedure for using an AED on a child or baby is the same as the procedure for using an AED on an adult. Some AEDs come with pediatric AED pads that are smaller and designed to deliver a less powerful shock. These pads should be used on children up to the onset of puberty or weighing less than 55 pounds. Other AEDs have a key or switch that configures the AED for use on a child. If pediatric AED pads are not available or the AED does not have a pediatric setting, it is safe to use the adult pads and setting on a child or baby.

Medical Direction and AEDs

In some professions, defibrillation is designated as a controlled medical act. If you are providing care under the authority of a medical director, he or she may choose to adopt different protocols than those of the Canadian Red Cross. The specific protocols will be written in a standing order. You should always follow the instructions of your medical director. The Canadian Red Cross accepts no responsibility for any modifications made to the AED protocol set out in this text.

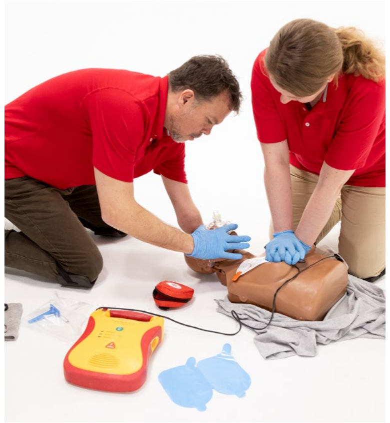
AED Maintenance

AEDs require minimal maintenance, but it is important to check them regularly according to the manufacturer's instructions or your employer's policy. This ensures that they remain in good working order and are ready for use whenever they are needed.

To ensure that your AED is ready to use:

- Familiarize yourself with the owner's manual and follow the manufacturer's instructions for maintenance.
- Familiarize yourself with the method the AED uses to indicate the status of the device. Many AEDs have a status indicator that displays a symbol or illuminates to indicate that the AED is in proper working order and ready to respond. The status indicator may also display symbols indicating that routine maintenance is needed (e.g., a battery change) or that a problem with the device has been detected. Some AEDs have a warning indicator that will illuminate or beep if the AED is not in proper working order or requires maintenance.
- Check regularly to make sure that the battery is properly installed and has not reached its expiration date.
- Make sure AED pads are adequately stocked, stored in a sealed package, and within their expiration date.
- After using the AED, make sure that all supplies are restocked and that the device is in proper working order.
- If at any time the AED fails to work properly or warning indicators appear, take the AED out of service and contact the manufacturer or the appropriate person at your place of employment (according to your employer's policy). You may need to return the AED to the manufacturer for service. If the AED stops working during an emergency, continue giving CPR until EMS personnel take over.

! Some workplaces have additional requirements around AEDs that are dictated by regulations and legislation: ensure that you are aware of any local, provincial/territorial, or organizational laws and regulations that apply to you.



Two-Person CPR

Remember: when you are giving CPR, you want to:

- Give high-quality compressions at the appropriate depth and rate, and
- Minimize interruptions to compressions.

If you are the only trained First Aider at the scene, you will begin to tire as you give CPR, and the quality of your compressions will diminish. You will also need to stop CPR to ready the AED for use when it arrives, which means that during that time there will be no oxygenated blood moving through the person's body.

If you have another First Aider to help you, you can work as a team to provide care. One option is to have each First Aider do 5 whole cycles of 30 compressions and 2 breaths before switching places. Another option is outlined in the steps below.

Any time you do CPR, you must call EMS/9-1-1 and get an AED and first aid kit.

1. Person 1 begins compressions, counting out loud.
   - Do between 100 and 120 chest compressions per minute (roughly 2 compressions per second).
   - Let the chest rise after each compression.
2. Meanwhile, Person 2 calls EMS/9-1-1 and gets an AED and a first aid kit.
3. Person 2 attaches the AED pads, if available.
4. Person 2 opens the airway with a head-tilt/chin-lift.
5. Every 30 compressions, Person 1 pauses compressions and Person 2 gives 2 breaths.
   - Interrupting chest compressions to deliver 2 rescue breaths should take less than 10 seconds.
   - Breathe with just enough air to cause the chest to rise.
6. Person 1 and Person 2 should switch places after every 5 cycles of 30 compressions and 2 breaths, when they are tired, or when the AED re-analyzes.

7 Breathing Emergencies

A person who is having difficulty breathing is in respiratory distress. A person who is not breathing is in respiratory arrest. Both respiratory distress and respiratory arrest are breathing emergencies. Any person showing signs of respiratory distress is in a potentially life-threatening situation and must receive immediate care. This is especially true for babies and children.

When a person is experiencing a breathing emergency, the oxygen supply to the person's body is either greatly reduced or cut off entirely, so it is important to act at once. If breathing stops or is restricted long enough, the person will become unresponsive, the heart will stop beating, and body systems will quickly fail. Brain cells begin to die after 4 to 6 minutes without oxygen.

A breathing problem can be identified by watching and listening to the person's breathing and by asking the person how he or she feels. If a person is having trouble breathing, do not wait to see if his or her condition improves without intervention, but begin providing care immediately.

Respiratory Distress

Common Causes

Respiratory distress may be caused by any of the following:

- Hyperventilation
- Asthma or chronic obstructive pulmonary disease (COPD)
- Pneumonia or bronchitis
- An allergic reaction
- Anaphylaxis
- A heart attack or heart failure
- Chest trauma
- Poisoning
- A drug poisoning
- Electrocution
- Certain mental health conditions (e.g., panic disorders)

Chronic Obstructive Pulmonary Disease (COPD)

Chronic obstructive pulmonary disease (COPD) is a condition of the airways that causes a loss of lung function. The average Canadian with COPD is 65 years old or older and has a long history of smoking. However, the disease has been diagnosed in people who are as young as 40 years old.

What to Look For

The following are signs and symptoms of respiratory distress:

- Shortness of breath or gasping for breath
- Trouble speaking in complete sentences (due to difficulty breathing)
- Wheezing, gurgling, or high-pitched noises
- Breathing abnormally quickly or slowly
- Unusually deep or shallow breathing
- Cool, moist skin
- Skin that is a different colour than usual
- Feelings of fear
- Dizziness or light-headedness

What to Do

Call

Call EMS/9-1-1.

Care

1. If the person carries medication for respiratory distress, offer to help the person take his or her medication.
2. Encourage the person to sit down in a comfortable position (leaning forward may help make breathing easier).
3. Provide reassurance, as this can help reduce anxiety and help the person control his or her breathing.
4. Monitor the person's condition and provide continual care until EMS personnel arrive.

Hyperventilation

Hyperventilation is a condition in which a person is breathing much more quickly than usual. This upsets the body's balance of oxygen and carbon dioxide.

Common Causes

The following are common causes of hyperventilation:

- Strong emotions such as excitement, fear, or anxiety
- Asthma
- Injuries, especially injuries to the head
- Exercise
- Life-threatening bleeding

Prevention

If you tend to hyperventilate due to anxiety, panic, or stress, relaxation techniques such as breathing exercises may help. If you hyperventilate due to a diagnosed medical condition, speaking to your doctor will help you learn how to treat or control it.

What to Look For

The following are signs and symptoms of hyperventilation:

- Rapid, shallow breathing
- A feeling of suffocating or not getting enough air
- Fear, anxiety, or confusion
- A feeling of dizziness
- Numbness or tingling of the fingers and toes
- Muscle contractions, usually in the hands, feet, arms, and legs
- Headache
- Sweating

What to Do

Call

It is not always necessary to call EMS/9-1-1 for a person who is hyperventilating. You should call EMS/9-1-1 and get an AED if the hyperventilation does not stop after a few minutes, the person becomes unresponsive, or you suspect that the person is hyperventilating because of an injury or illness.

Care

1. Encourage the person to take controlled breaths by breathing in slowly, holding his or her breath for a few seconds, and then gradually exhaling.

Asthma

Many people have asthma—a chronic illness in which certain substances or conditions (i.e., triggers) cause inflammation and swelling of the bronchioles (i.e., the small tubes at the base of the lungs), making it harder for air to move in and out of the lungs. Asthma is more common in children. People who have asthma usually know what can trigger an attack and take measures to avoid these triggers. Asthma is usually controlled with medication.

Common Causes

Asthma can be triggered by:

- Air pollution or poor air quality (e.g., cigarette smoke)
- Allergies (e.g., to pollen, food, drugs, insect stings, or animals)
- Temperature fluctuations, extreme humidity, or extreme dryness
- Strong odours (e.g., perfume, cologne, scented cleaning products)
- Colds and flus
- Physical activity
- Respiratory infections
- Stress or anxiety

Prevention

If you have asthma, the following precautions may help to prevent attacks:

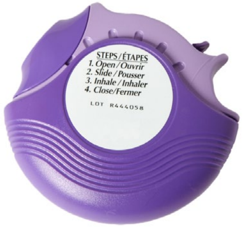
- Know what triggers your attacks and avoid them if possible.
- Ensure that prescribed medication is always easily accessible in case of an attack.

If a child has asthma:

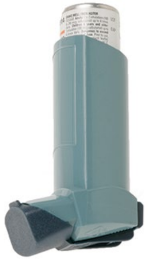
- Make sure that anyone who supervises the child knows about the asthma and how to help give medication if necessary.

Asthma Medications

There are two main types of medication used by people with asthma: Long-term control medication and quick-relief (rescue) medication. A person with asthma may take one, both, or neither of them. Both long-term control medications and quick-relief (rescue) medications may be given through an inhaler, through a nebulizer, or orally.



Long-term control medications, sometimes called “preventers,” are taken regularly, whether or not signs and symptoms of asthma are present. These medications help prevent asthma attacks by reducing inflammation and swelling and by making the bronchioles less sensitive to triggers.



Quick-relief (rescue) medications are taken when a person is experiencing an acute asthma attack. These medications are sometimes called “bronchodilators,” because they work quickly to relax the muscles that tighten around the bronchioles, opening (dilating) them immediately so that the person can breathe more easily.

What to Look For

Even when a person takes steps to manage his or her asthma by avoiding triggers and taking prescribed long-term control medications, he or she may still occasionally experience asthma attacks. The signs and symptoms of an asthma attack include the following:

- Wheezing or coughing, especially when exhaling
- Gasping for air
- Shortness of breath (feeling unable to get enough air into the lungs)
- Rapid, shallow breathing (or trouble breathing)
- Anxiety and fear
- Tightness in the chest
- Tingling in the hands and feet
- Sweating
- Inability to say more than a few words without pausing to breathe

What to Do

Call

Call EMS/9-1-1 and get an AED if the person is struggling to breathe, the person's breathing does not improve after taking his or her medication, or the person becomes unresponsive.

Care

1. Eliminate any asthma triggers, if possible. If something in the environment is causing the attack, move the person away from the area if it is safe to do so.
2. Help the person get into a comfortable position and provide reassurance.
3. Guide the person through taking any prescribed quick-relief asthma medication that he or she has available.

Providing Care for an Asthma Attack: Using an Asthma Action Plan

An individual who is at risk for ongoing asthma attacks may have a written plan that outlines the assessment and treatment steps, and clarifies when to call EMS/9-1-1. This is most common for children in child care situations. If you are a caregiver for a person who has an asthma action plan, familiarize yourself with it and be sure you understand what to do if the person has an attack.

! If you work in a child care facility, follow your facility's policies and local legislation around administering medication to children.

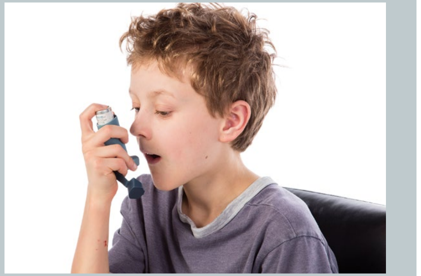
Using an Inhaler

Guide the person through these steps:

1. Rapidly shake the inhaler 3 or 4 times.

2. Remove the cap from the inhaler.

3. Breathe out as much air as possible, away from the inhaler.
4. Bring the inhaler to the mouth and close the mouth around the mouthpiece.

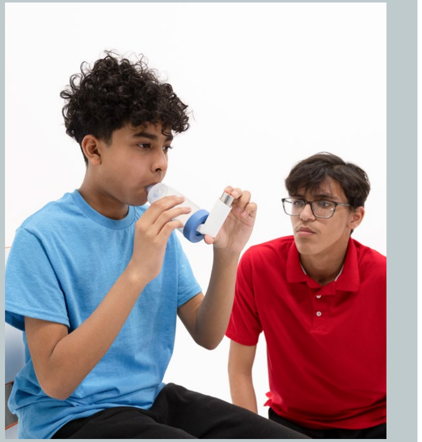


5. Press the top of the inhaler while taking one slow, full breath.
6. Hold the breath for as long as is comfortable (up to 10 seconds), and then breathe out.

Using an Inhaler with a Spacer

Guide the person through these steps:

1. Rapidly shake the inhaler 3 or 4 times.
2. Remove the cap from the inhaler.
3. Remove the spacer's cap (if it has one), and put the inhaler into the spacer.
4. Bring the spacer to the mouth.
5. Press the top of the inhaler once to dispense the medication into the spacer.
6. Take slow, deep breaths, holding each breath for several seconds (if possible).



! If the person is unable to administer their prescribed quick-relief asthma medication themselves and has indicated they need help, you can administer it for them.

Allergic Reactions

Normally, our immune systems help to keep us healthy by fighting off harmful pathogens that can cause disease. In a person with an allergy, however, the immune system can react to normally harmless substances to produce allergic reactions.

An allergic reaction occurs in two stages. First, the immune system mistakes a normally harmless substance for a dangerous invader and produces antibodies that remain on alert for that particular allergen. When the body is exposed to the allergen again, these antibodies release a number of immune system chemicals, such as histamine, that cause allergy symptoms.

While certain substances are more common as allergens (e.g., peanuts and pollen), almost anything can produce an allergic reaction. The severity of an allergic reaction depends on the person. It can be as minor as a slight irritation or as serious as a life-threatening emergency (anaphylaxis). The signs and symptoms of an allergic reaction depend on the trigger, but they typically involve the airways, skin, sinuses, nasal passages, cardiovascular system, and digestive systems.

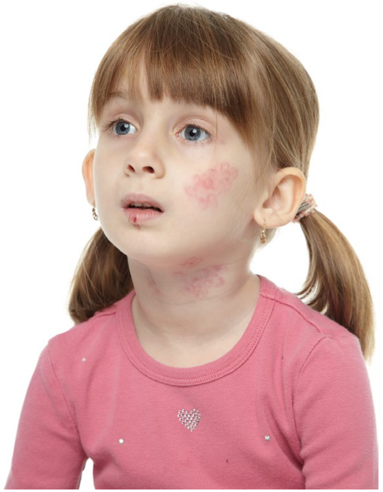
Preventing Allergic Reactions in a Child You Are Caring For

Discuss the allergy with the parent or guardian before you begin caring for the child, and ask at least the following questions:

- What is your child allergic to?
- What signs will tell us that your child is having an allergic reaction?
- What should we do if your child has a reaction?
- Has the doctor prescribed any allergy medication? For instance, should you give us your child's epinephrine auto-injector?

Make a list of the allergies of each child under your care, and keep it in a location where you can refer to it easily, especially in cooking and food service areas. Be sure to read all the ingredients on all food package labels when preparing and cooking food. Before serving a food that is a common allergen (e.g., eggs, shellfish, milk, nuts), ensure that the parent or guardian has given it to the child at home without causing a reaction.

What to Look For



Signs and symptoms of an allergic reaction can range from mild to very severe and include the following:

- Runny, itchy, or stuffy nose
- Sneezing
- Watery, itchy, red, or swollen eyes
- Nausea, vomiting, or diarrhea
- A rash or hives (raised, itchy areas of skin)
- Tingling of the mouth
- Swelling of the lips, tongue, face, or throat
- Difficulty swallowing
- Coughing, chest tightness, wheezing, or shortness of breath
- Weakness, dizziness, or confusion

What to Do

Call

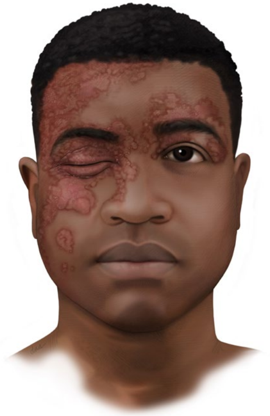
Call EMS/9-1-1 and get an AED if the reaction is severe, the person is struggling to breathe, or the person loses responsiveness.

Care

1. Calm and reassure the person.
2. Try to identify the allergen and have the person avoid further contact with it.
3. Watch the person for signs of increasing distress.
4. If the person uses a medication to control allergic reactions (such as antihistamines), guide him or her through taking it.

Antihistamines

An antihistamine is a medication that counteracts the effects of histamine (a chemical released by the body during an allergic reaction). Antihistamines are supplied as pills, capsules, or liquids and are taken by mouth. The person should take the antihistamine according to the medication label and his or her healthcare provider's instructions.



Anaphylaxis

Anaphylaxis is a severe allergic reaction. While mild allergic reactions are localized, anaphylaxis is a body-wide reaction and it can cause system-wide inflammation and swelling. In some cases, the air passages swell, making it difficult to breathe. It is important to act quickly when a person is experiencing anaphylaxis, as it can lead to death if it is not cared for immediately.

Common Causes

Anything that causes other allergic reactions can also cause anaphylaxis, and the causes vary from one person to another. The most common allergens that trigger anaphylaxis include:

- Insect stings
- Food
- Medications

Prevention

The following steps may help to prevent an anaphylactic incident:

- Avoid the substances, foods, or insects that cause reactions.
- Wear a medical identification product and carry the appropriate medication at all times.

What to Look For

The signs and symptoms of anaphylaxis may be similar to the signs and symptoms of a mild allergic reaction, but they are more pronounced. A person experiencing an anaphylactic emergency may develop one or more signs and symptoms within seconds or minutes of coming into contact with the allergen.

Anaphylaxis can affect a variety of body systems and can present in various ways. If a person exhibits signs and symptoms from two or more of these categories—especially after contact with an allergen—you should provide care for anaphylaxis:

- Skin (e.g., swelling of the lips, face, neck, ears, and/or hands; a raised, itchy, blotchy rash; flushing; or hives)
- Breathing (e.g., a feeling of tightness in the chest or throat, coughing, wheezing, or high-pitched noises)
- Alertness (e.g., weakness, dizziness, or unresponsiveness)
- Stomach (e.g., stomach cramps, nausea, vomiting, or diarrhea)

What to Do

Call

Call EMS/9-1-1 and get an AED.

Care

1. If the person has an epinephrine auto-injector, guide him or her through using it.
2. Provide reassurance and encourage the person to breathe normally.
3. Help the person get into a comfortable position.

! If the person is unable to administer their prescribed epinephrine auto-injector themselves and has indicated they need help, you can administer it for them.

If the person's condition does not improve 5 minutes after the initial dose of epinephrine and EMS personnel have not yet arrived, guide the person through taking a second dose, if available. The second dose should be taken in the leg that they did not use for the first dose.

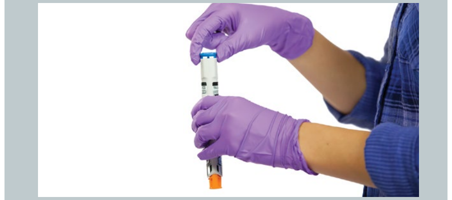
If responsive, the person may want to take additional medication such as an antihistamine.

! If you work in a child care facility, follow your facility's policies and local legislation around administering medication to children.

Using an Epinephrine Auto-Injector

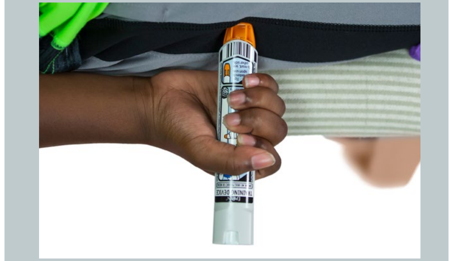
Guide the person through these steps:

1. Remove the safety cap.

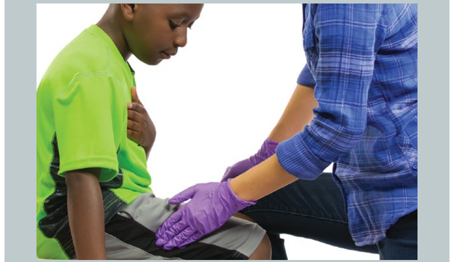


2. Place the injection tip against the middle third of the outer thigh and push the epinephrine auto-injector firmly against the thigh with a quick motion. A click should be heard.

3. Hold in place as directed, usually for 5 to 10 seconds.



4. Remove the epinephrine auto-injector. Use caution if the needle tip is exposed.
5. Rub the injection site for 30 seconds to help with medication absorption.



6. Make sure the used epinephrine auto-injector is placed in a rigid container and goes with the person to the hospital.
7. Have the person rest quietly until EMS personnel arrive.

Epinephrine

Epinephrine is a drug that slows or stops the effects of anaphylaxis. If a person has a risk of experiencing anaphylaxis, he or she may carry an epinephrine auto-injector (a syringe system that contains a single dose of epinephrine). Different brands of epinephrine auto-injectors may be available, but all work in a similar fashion. Some have audio prompts to guide the user.

Different auto-injectors contain different doses based on the weight of the person (0.15 mg for children weighing between up to 30 kg [66 lb.], and 0.3 mg for children and adults weighing more than 30 kg [66 lb.]).

Many healthcare providers advise that people with a known history of anaphylaxis carry at least two doses of epinephrine (two auto-injectors) with them at all times. This is because more than one dose may be needed to stop an anaphylactic reaction. The person should take a second dose if he or she is still having signs and symptoms of anaphylaxis 5 minutes after the first dose.

8 Wound Care

Wounds such as bruises, scrapes, and small cuts are very common injuries, and are caused in a variety of ways.

Prevention

The following general tips will help you to avoid both serious and minor wounds:

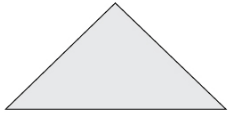
- Develop safe habits, such as never running with sharp objects.
- Use proper safety equipment when playing sports or engaging in recreational activities.
- Wear proper safety equipment in the workplace, and request training before using any potentially dangerous tools or equipment.
- Stay alert and focused when engaged in any potentially risky activity.

Bandaging Guidelines

Dressings are pads that are placed on open wounds to protect them.

Bandages are pieces of material that are wrapped around dressings to hold them in place and protect them.

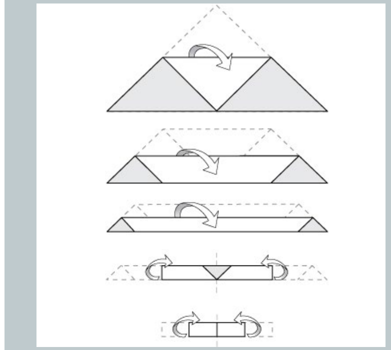
- Use clean, preferably sterile, dressings.
- Check circulation below the injury before and after applying a bandage. If circulation is reduced, loosen the bandage.
- If blood soaks through the bandage, place more dressings and another bandage on top. The dressing that is in contact with the wound should remain in place and not be removed.
- Dressings and bandages should be kept clean and dry to decrease the risk of infection. Once bleeding is under control and the wound has begun to heal, dressings that become wet should be replaced with dry dressings.



Triangular Bandages

Triangular bandages are useful in your first aid kit because they can be used both to make slings and to make broad bandages to hold splints in place.

Folding a Triangular Bandage Into a Broad or Narrow Bandage



1. Fold the tip of the triangle down to touch the base.
2. Fold the bandage in half lengthwise to make a broad bandage.
3. Fold it in half again to make a narrow bandage.

Cuts and Scrapes (Minor Bleeding)

A cut is a wound where the skin has been split open. The edges of the cut can be jagged or smooth. Scrapes are wounds where the skin has been rubbed or scraped away. Signs and symptoms of a cut or scrape may include pain and bleeding.

What to Do

☎ Call

Call EMS/9-1-1 if you suspect that there may be more serious injuries.

When to Call

Cuts and scrapes do not usually need emergency care.

You should advise the person to contact their care provider for cuts and scrapes if:

- The person is not protected against tetanus.
- You suspect the wound requires stitches (see the Stitches section below).
- You suspect the wound is infected.

✚ Care

1. There is usually minimal bleeding with cuts and scrapes, but if the wound is bleeding significantly, apply direct pressure until it stops.
2. If possible, rinse the wound for 5 minutes with clean, running tap water.

3. Cover the wound with a sterile non-stick dressing and/or bandage.
4. Ensure that the person knows to watch for signs of infection over the next few days.

Stitches

Wounds that need stitches should be stitched in the first few hours after the person was injured. Stitches should be done by a trained medical professional.

A wound may need stitches if:

- The edges of the skin do not touch.
- The wound is more than 2.5 cm (1 in.) long.
- The wound is near a joint.
- The wound is on a hand or foot.
- The wound is on the person's face.

Stitches will help to:

- Speed up healing
- Reduce the chance of infection
- Leave a less noticeable scar

Puncture Wounds

A puncture wound occurs when a hole in the skin is created by a pointed object, such as nails, pieces of glass, and animal teeth.

Common Causes

Puncture wounds may be caused by:

- Injuries from pointed objects such as nails or pieces of glass
- Animal bites

Prevention

The following may help you to avoid injuries that cause puncture wounds:

- Stay away from unfamiliar animals.
- Wear shoes when walking outside.
- Clean up sharp objects, like glass, right away. Dispose of sharp objects safely (e.g., do not put broken glass directly into a garbage bag, and, if possible, remove nails from objects before putting the objects into a garbage bag).

What to Look For

These signs may indicate an injury caused by a puncture wound:

- Bleeding
- Bruising
- A hole where the object went through the skin

What to Do

Call

Call EMS/9-1-1 and get an AED if the wound is deep or large.

Care

1. If the wound is bleeding, apply direct pressure until the bleeding stops.
2. Once the bleeding is controlled, wash the wound thoroughly with water. If possible, rinse the wound for 5 minutes with clean, running tap water.
3. Cover the wound with a sterile dressing and/or bandage.
4. Ensure that the person knows to watch for signs of infection over the next few days.

Scalp Injuries

What to Do

When performing a secondary assessment of a person with a suspected scalp injury, check the scalp thoroughly to ensure that you have uncovered the full extent of the injury.

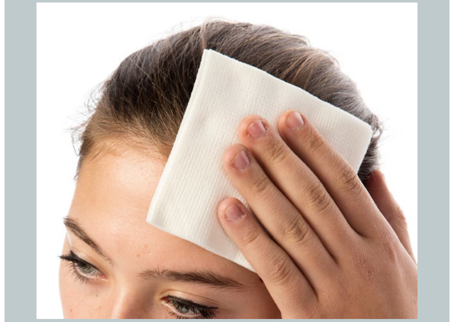
! Because the scalp contains many blood vessels, even small scalp wounds can have significant bleeding.

Call

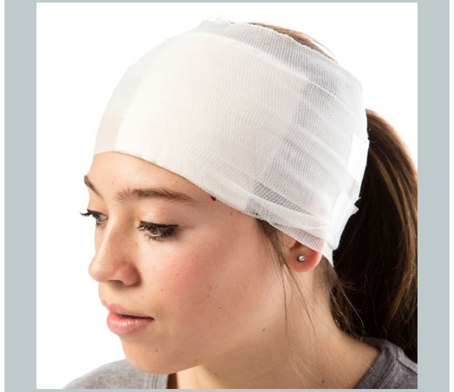
Call EMS/9-1-1 and get an AED if you are not sure how serious the scalp injury is or if you feel a dip, a soft area, or pieces of bone.

Care

1. Put dressings on the wound and have the person hold them in place to control the bleeding.



2. Secure the dressings with a bandage.



3. If you feel a dip, a soft area, or pieces of bone:
   - Treat the injury as a head injury.
   - Put direct pressure on the wound only if the bleeding is life-threatening. Otherwise, try to control the bleeding with pressure on the area around the wound.
4. Provide continual care until EMS personnel arrive.

Infection

An infection occurs when dirt, foreign bodies, or other materials carrying germs get into a wound. Infections can be localized (e.g., in a cut) or systemic (throughout the body). Infections accompanied by nausea, fever, or general malaise are typically systemic, and can be life-threatening.

Prevention

The following general tips help to minimize the risk of infection:

- Always wash your hands before and after giving first aid.
- Wear gloves whenever possible if you will be coming into contact with someone's bodily fluids.
- Keep your immunizations up to date. If you have been wounded and do not know when your last tetanus shot was, seek medical attention.
- Keep any wound clean and wash it regularly. Change the dressing and bandages if they become dirty or wet.
- Use sterile dressings whenever possible. If sterile dressings are unavailable, use the cleanest option possible.

What to Look For

Any of the following signs around an injury may indicate an infection:

- Redness
- Red streaks moving away from the wound
- Pus
- Heat or warmth
- Swelling
- Tenderness
- Excessive itchiness

What to Do

☎ Call

Call EMS/9-1-1 and get an AED if:

- The person has a level of responsiveness change.
- The person's breathing is abnormal.
- The person has a seizure.
- There are red streaks coming from the wound.

Burns

Burns are soft-tissue injuries caused by chemicals, electricity, heat, or radiation.

Prevention

There are different methods of prevention for different types of burns.

Chemical Burns

The following precautions will help prevent chemical burns:

- Store chemicals in their original containers.
- Wear protective gear when handling chemicals.
- Wash your hands after touching chemicals.
- Get trained in a hazardous materials training program, such as the Workplace Hazardous Materials Information System (WHMIS)/Globally Harmonized System (GHS) of Classification and Labelling of Chemicals.
- Read the label before using a product.
- Be aware of caustic plants in your area.

Electrical Burns

The following tips will help prevent electrical burns:

- Keep electrical appliances away from water.
- If an electrical cord is frayed, fix it or dispose of it.
- If there are young children in the building, cover electrical outlets.
- Before approaching a person with a suspected electrical burn, make sure that trained personnel turn off the electrical current.

Burns from Lightning Strikes

The following precautions will help prevent burns from lightning strikes:

- As soon as a storm is seen or heard, stop swimming or boating and get away from the water, because water conducts electricity.
- Stay indoors during thunderstorms. A picnic shelter or car (with the windows rolled up) will also provide some protection.
- If caught outside, stay away from telephone poles and tall trees. Stay off hilltops and try to crouch down in a ravine or valley if shelters are not available nearby.
- Stay away from things that conduct electricity, such as farm equipment, small metal vehicles (e.g., motorcycles, bicycles, and golf carts), wire fences, clotheslines, metal pipes, and railings.

Thermal Burns

The following precautions will help prevent thermal burns:

- When cooking on the stove, turn the pot handles in and use only the back burners when possible.
- Keep the hot water tank temperature at or below 49°C (120°F).
- Keep children away from heat sources and appliances such as ovens, barbecues, space heaters, woodstoves, candles, and fireplaces.
- Keep hot drinks out of children's reach.

Sunburns

The following precautions will help prevent sunburns:

- Limit exposure to the sun if possible, especially between 10:00 A.M. and 3:00 P.M.
- Wear light coloured clothing that covers as much of the body as possible.
- Use a broad-spectrum sunscreen with a sun protection factor (SPF) of at least 30 and apply it 15 to 30 minutes before going outdoors. Reapply sunscreen at least every 2 hours, as well as after being in the water and after sweating.

What to Do

Call

Call EMS/9-1-1 and get an AED immediately if:

- The burns make it difficult for the person to breathe.
- The person is in a great deal of pain or becomes unresponsive.
- The burns were caused by chemicals, explosions, or electricity.
- The burns involve a large amount of blistering or broken skin, or the burns cover the face, neck, hands, genitals, or a larger surface area.

If at least one of the above conditions is true and you are alone, call EMS/9-1-1 yourself, get an AED, and then return to care for the person. If it is a superficial burn, you should not need to call EMS/9-1-1, unless the person is in a great deal of pain or becomes unresponsive. Always call EMS/9-1-1 for a full thickness burn, regardless of size.

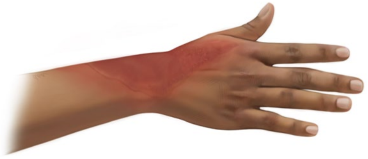
Care

1. While the care for all burns is similar, specific care steps can vary depending on the cause of the burn. Care should be taken to monitor for hypothermia when cooling large burns. This is particularly important in children. Cover the person with a blanket if the person complains of feeling cold.

Thermal Burns

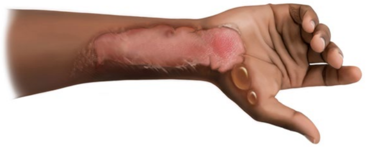
Thermal burns are caused by heat, hot liquid, steam, or open flames. The care that is required varies by the thickness of the burn, so you should determine the burn's seriousness before beginning to provide care.

What to Look For



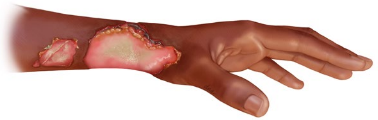
Superficial Burns

- Redness
- Pain
- Possible swelling



Partial Thickness Burns

- Redness
- Pain
- Possible swelling
- Blisters



Full Thickness Burns

- Redness
- Pain (may not be present in the most severely burned areas due to nerve damage)
- Possible swelling
- Blisters
- Charred or waxy, white flesh

What to Do

Superficial Burns

Care

1. Cool the affected area with clean running or standing water for at least 10 minutes. A clean cool or cold (but not freezing) compress can be used as a substitute.

What to Do

Partial Thickness Burns

Care

1. Cool the affected area with clean running or standing water for at least 10 minutes. A clean cool or cold (but not freezing) compress can be used as a substitute.
2. Remove jewellery and clothing from the burn site, but do not attempt to move anything that is stuck to the skin.
3. Once it is cool, cover the burn loosely with a dry, sterile dressing, preferably non-stick gauze.
4. Encourage the person to seek medical attention even if it is not necessary to call EMS/9-1-1.

What to Do

Full Thickness Burns

Care

1. Stop the burn from worsening by cooling the affected area with clean running or standing water for at least 10 minutes. A clean, cool or cold (but not freezing) compress can be used as a substitute.
2. Remove jewellery and clothing from the burn site, but do not attempt to move anything that is stuck to the skin.
3. Once it is cool, cover the burn loosely with a dry, sterile dressing, preferably non-stick gauze.
4. Have the person lie down until EMS personnel arrive.

Chemical Burns

Chemical burns can be caused by a wet or dry caustic chemical. Use caution with dry caustic chemicals, as they may spread or react if they become wet.

What to Do

Care

1. Wear protective equipment to avoid being burned yourself.
2. If there are dry chemicals present, brush them off the person's skin before flushing with water.
3. Flush the affected areas with large amounts of cool running water for at least 15 minutes, or until EMS personnel arrive. Flush the chemicals away from areas of the body that have not been contaminated.
4. Remove any clothing that is wet or that has been contaminated by the chemical.
5. Refer to the appropriate Safety Data Sheet (SDS) for additional first aid measures, if it is available.

Electrical Burns

Electrical burns are caused by powerful electrical currents. They are typically caused by a person either touching a live electrical circuit or being struck by lightning. Because electricity and lightning can affect the heart, it is important to monitor the person's ABCs closely.

What to Do

Care

1. Treat the person as if he or she has a head and/or spinal injury.
2. Look for two burns (the entry and exit points) and care for them as you would care for thermal burns.

Radiation Burns

The most common type of radiation burn is a sunburn, but they can also be caused by exposure to radioactive substances.

What to Do

Care

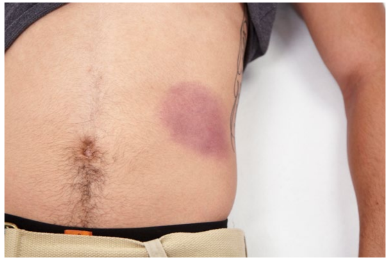
1. If the burn results from exposure to a radioactive substance, consult the appropriate workplace safety system (e.g., WHMIS) for specific first aid steps.
2. Care for radiation burns as you would care for thermal burns.

Special Considerations When Caring for Burns

Remember the following special considerations when providing care for burns:

- Don't use ointments on partial or full thickness burns.
- Blisters are a natural cooling system. Leave them in place.
- Touch a burn only with sterile or clean dressings.
- Do not use absorbent cotton or pull clothes over any burned area.

Pay close attention to the person's airway. Look for signs of burn injuries around the face. If you suspect that the airway or the lungs may be burned, monitor the person's breathing closely.



Bruises

A bruise is a discoloured area of the skin that is created when blood and other fluids seep into nearby tissues.

What to Look For

The following are signs and symptoms of bruising:

- Discoloured skin (red, purple, black, or blue areas)
- Swelling
- Pain

What to Do

Call

If the person is in severe pain or cannot move a body part without pain, or you think the force that caused the injury was great enough to cause serious damage or life-threatening bleeding, call EMS/9-1-1 and get an AED immediately. You may be dealing with internal bleeding, head and/or spinal injuries, or a bone, muscle, or joint injury. Care for the injury accordingly.

Care

1. Using ice or another cold source, cool the injured area to help reduce pain and swelling. Place some sort of cloth, towel, or pad between the cold source and the skin to reduce the risk of freezing.

2. Apply the cold source for 20 minutes of every hour, for as long as it continues to help ease the person's pain (up to 48 hours).

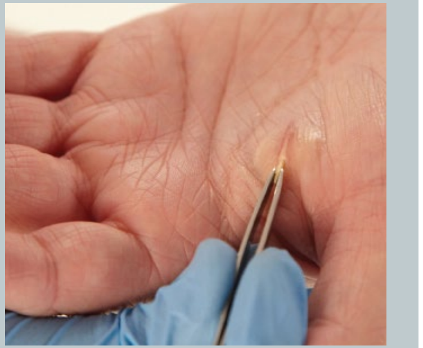
Splinters

A splinter (or "sliver") is a sharp, thin piece of material that is stuck in the surface of the skin. If the splinter is completely below the skin, encourage the person to seek medical attention rather than attempting to remove it yourself.

What to Do

Care

1. Gently grab the exposed end of the splinter with tweezers and carefully pull it out.
2. Wash the area with water and apply a bandage.



Nosebleeds

Common Causes

Nosebleeds may be caused by the following:

- Forceful nose blowing
- High blood pressure
- Dry weather conditions
- Trauma to the nose or head
- Bleeding disorders

If you know that the bleeding is caused by an object in the nose, refer to the care for foreign objects in the nose.

Prevention

To prevent nosebleeds:

- Use a humidifier if the air indoors is dry.
- Wear protective athletic equipment when participating in sports that could cause injuries to the nose.
- Practice gentle nose blowing.
- Teach children not to pick their noses.

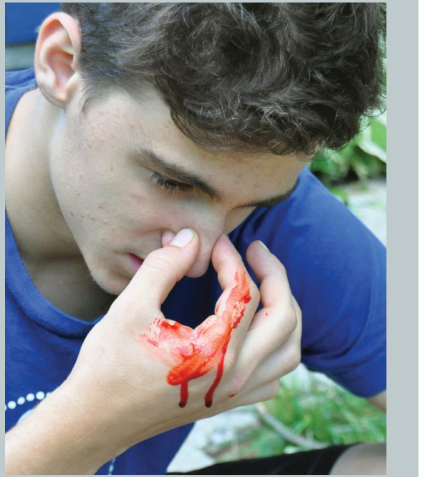
What to Do

Call

Call EMS/9-1-1 if the bleeding continues for more than 15 minutes, the bleeding is the result of a head injury, or the person is losing a large amount of blood.

Care

1. Have the person sit with the head slightly forward, pinching the nostrils, for 10 to 15 minutes. If the nosebleed was caused by a severe head injury, do not pinch the nose.
2. Once you have controlled the bleeding, tell the person to avoid rubbing, blowing, or picking his or her nose because this could start the bleeding again.
3. If the person loses responsiveness, place him or her in the recovery position to allow blood to drain from the nose.



Foreign Objects in the Nose

What to Look For

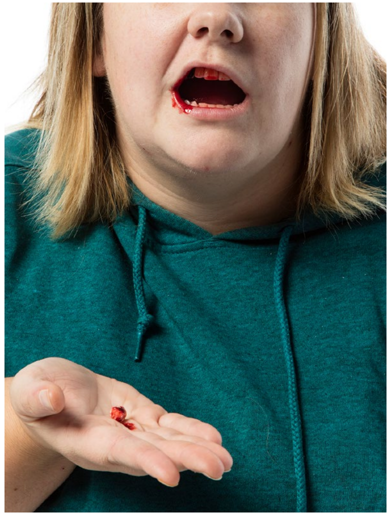
An object in the nose may be visible, and may also cause the following signs and symptoms:

- Unusual noises when the person breathes through his or her nose
- Bleeding
- Nose deformity

What to Do

Care

1. If you can easily see and grasp the object, remove it.
2. If the object cannot be dislodged easily, leave it in place for a medical professional to remove.
3. Prevent the person from attempting to remove the object and from blowing his or her nose.



Knocked-Out Teeth

Common Causes

A tooth can be knocked out by any kind of blow that involves the mouth.

Prevention

The following tips may avoid an injury that results in knocked-out teeth:

- Wear appropriate equipment when playing sports, such as a mouth guard or face mask.
- Always wear a seat belt while in the car and do not eat or drink in a moving car.

What to Look For

Aside from a tooth that is visibly missing, signs and symptoms of knocked-out teeth include the following:

- Bleeding (although this is often very minimal)
- Pain in the mouth

What to Do

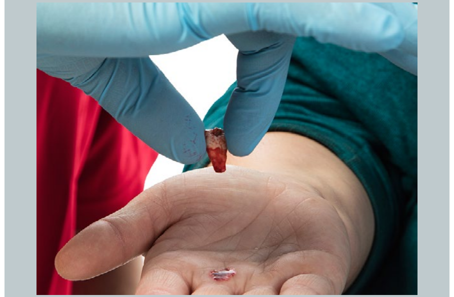
Call

Call EMS/9-1-1 and get an AED if the knocked-out tooth was caused by a forceful blow to the head, especially if the person is unresponsive, or you suspect that there may be other more serious injuries.

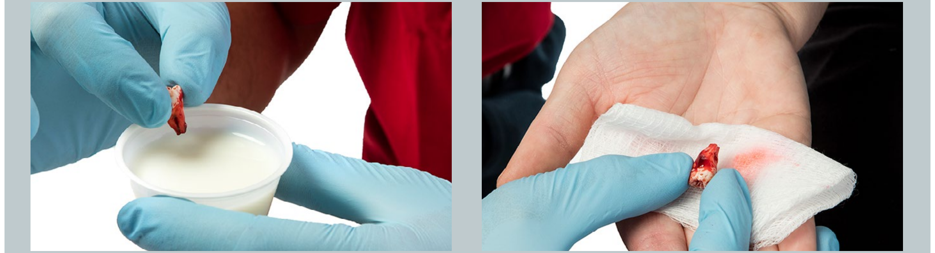
Care

1. Control any bleeding by having the person bite down on a clean dressing.

2. Carefully pick up the tooth by the crown (the whiter part), not the root.



3. Put the tooth in egg white, coconut water, whole milk, or saline, if available, and keep it with the person. If none of these are available, wrap the tooth in gauze (or a clean cloth) with some of the person's own saliva. Seal the container and label it with the name of the person, the date, and the time.



4. Get the person to a dentist as soon as possible. The greatest chance for repair is during the first hour after the tooth is knocked out.

! An injury that knocks out a tooth can also be powerful enough to cause jaw, head, or spinal injuries.

Eye Injuries

Eye injuries can have long-term consequences for a person's vision, so they must always be treated with extreme care. The eye is an extremely sensitive organ: Avoid touching the eye or putting pressure on or around it, as this can cause further damage. Wounds involving the eyelids or eye sockets should also be treated as eye injuries.

Common Causes

An eye injury may be caused by the following:

- Foreign objects or particles in the eye
- An impact to the eye
- Radiation or burns
- Chemicals or other caustic materials

Prevention

The following may help to prevent an eye injury:

- Wearing appropriate equipment in the workplace (e.g., safety glasses)
- Wearing appropriate equipment when playing sports (e.g., wearing a helmet with a visor or face protector when playing hockey)
- Wearing appropriate equipment during any activity that has the potential to cause eye injuries (e.g., wearing safety glasses while mowing the lawn)
- Wearing protective eyewear, such as sunglasses, when exposed to UV light

What to Look For

An eye injury may include the following signs or symptoms:

- Pain and irritation in the eye
- Redness of the eye
- Difficulty opening the eye
- Problems with vision
- Watering of the eye
- Deformities of the eye

What to Do

Call

Call EMS/9-1-1 if there is an impaled object in or near the eye, the eye is out of the socket, or the eye has been exposed to a chemical or caustic substance.

Care

If an object is impaled in or around the eye:

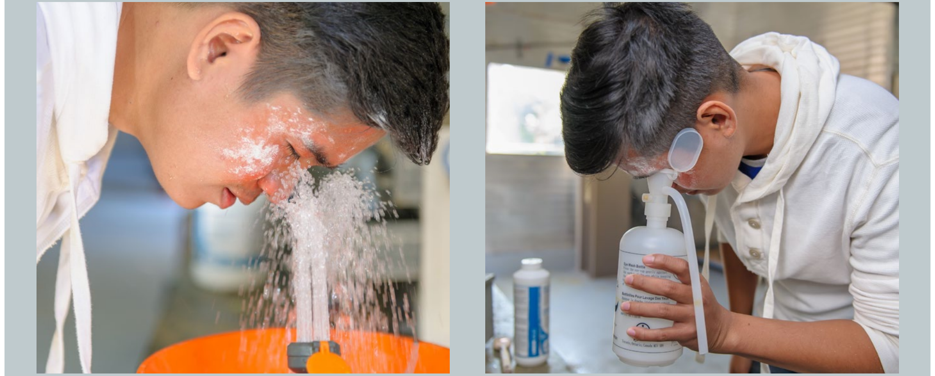
1. Have the person lie on his or her back and keep as still as possible.
2. Stabilize the object with bulky dressings.
3. Cover both eyes with gauze or another light material.
4. Provide comfort and reassurance until EMS personnel arrive.

If there is a foreign object in the eye but it is not impaled:

1. Try to remove the foreign object by having the person blink several times. The eye will produce tears that may wash out the object. An object that is not touching the eye itself (e.g., in the corner of the eye) may be removed with a moist cotton-tipped applicator.
2. Clean away any dirt around the eye and then gently flush the eye with running water (letting the water run away from the unaffected eye).
3. If these steps do not remove the object, the person should seek medical attention.

If there is a chemical or other caustic substance in the eye:

1. Gently flush the eye with running water (away from the unaffected eye) for at least 15 minutes, or until EMS personnel arrive.



Flash Eye

Thank you to the International Federation of Red Cross and Red Crescent Societies (IFRC) for their permission to refer to the International First Aid, Resuscitation, and Education Guidelines 2020 to inform the Flash Eye section. That document is the main reference for this section, except for the points noted by asterisks (*).

Flash eye is like an eye sunburn that can happen if a person's eyes get exposed to too much UV (ultraviolet) light. This can happen from the sun or other sources of UV light, such as welder's torches or tanning beds. Flash eye is also sometimes called snow blindness, arc eye, or flash burn.

Prevention

To help prevent flash eye, people can:

- Wear the appropriate protective equipment for their workplace (such as safety glasses or welding gear)*
- Wear protective eye gear when their eyes will be exposed to UV light, such as when they are in the sun (including in the winter)
- Wear eye protection that protects their eyes from direct or indirect radiation that might reach them from above, below, or sideways

What to Look For

A person with flash eye might have:

- A feeling that something is in their eyes
- A burning sensation in their eyes
- Pain that gets worse after a few hours*
- Blurred vision or loss of vision
- Red and watery eyes
- Light sensitivity
- Headaches
- Swelling around their eyes

What to Do

Call

Flash eye usually passes on its own in 12 to 24 hours, but advise the person to contact their care provider if the symptoms get worse or last longer than a day.

Care

1. Move the person away from the source of UV light and reassure them.
2. If they are wearing contact lenses, advise them to remove them.
3. Look at the person's eyes to check that they do not have a foreign object in their eye.*
4. Encourage the person to protect and let their eyes rest as much as possible by:
    - Staying indoors
    - Wearing sunglasses to relieve pain or discomfort
    - Keeping their eyes closed as much as possible
    - Covering their closed eyelids with a cool, damp cloth
    - Putting saline solution or eye drops in their eyes to keep them moist

Recovery

Advise the person to:

- Wear sunglasses when they are outside
- Avoid wearing contact lenses until their eyes have healed
- Follow their care provider's recommendations*

Ear Injuries

Prevention

The following tips can help prevent ear injuries:

- Wear proper protection when using loud equipment such as lawn mowers and chainsaws.
- Wear a helmet and other recommended safety gear when participating in sports and physical activities.
- Cover the ears when there is a risk of foreign objects or substances entering the ear (e.g., wear a swim cap when participating in water activities).

Common Causes

An ear injury may be caused by the following:

- An impact to the head
- Cuts or tears to the ear(s)
- Loud noises
- Blast injuries
- Foreign objects or substances in the ear

What to Look For

Signs and symptoms of an ear injury include the following:

- Blood or other fluid coming from within the ear
- Hearing problems
- Sudden or intense pain in the ear
- Swelling or deformity of the ear

What to Do

Call

Call EMS/9-1-1 and get an AED if there is blood or other fluid draining from the ear, or if the ear injury is the result of an explosion or pressure (e.g., while scuba diving).

Care

1. If the injury is an external wound, treat it the same way you would treat a wound on any other part of the body.

2. If there is a foreign object in the ear but you don't suspect a head and/or spinal injury, and it looks as if the object can be easily removed:
    - Tilt the head to the affected side, then gently tap the ear to loosen the object.
    - Attempt to grasp the object and pull it out.

Impaled Objects

An impaled object is anything that has penetrated through the skin and is stuck in the tissues below.

Common Causes

An object can become impaled when any type of force causes it to penetrate the skin and underlying tissue.

What to Look For

An impaled object will be visibly protruding from the person's body, and may cause the following signs and symptoms:

- Shock
- Pain
- Bleeding

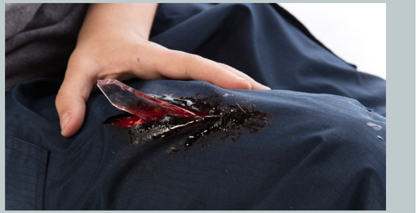
What to Do

Call

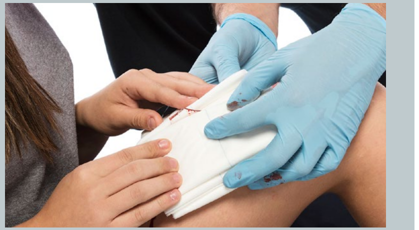
Call EMS/9-1-1.

Care

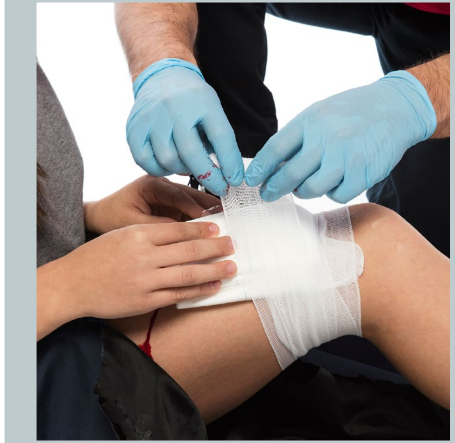
1. Keep the person still and leave the object in place.

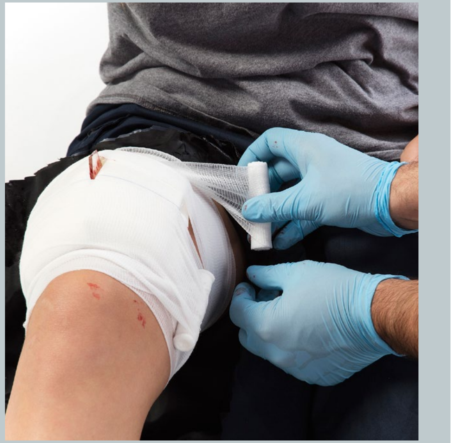


2. Expose the object by carefully removing any clothing around it.
3. Check the circulation below the site of the injury.
4. Stabilize the object by using bulky dressings.



5. Use bandages to hold the dressings in place. Wrap the bandages snugly, but not so tightly as to cut off circulation.





6. Once the dressings are secure, recheck circulation below the site of the injury.
7. Make sure the person gets medical attention.

Amputations

An amputation is a complete or partial severing of a body part. Although this causes a lot of damage to the surrounding tissues, bleeding may or may not be severe.

Prevention

To reduce the risk of amputation:

- Keep hands clear of doors when they are closing.
- Use caution near train tracks: only cross at designated crossings, and never walk along the tracks.
- Be extremely careful when on or around any farm machinery, even when it is turned off or not operating.

What to Do

If the body part is still partially connected to the body, put it back into place as best you can and treat the injury as an open wound or fracture.

Call

Call EMS/9-1-1.

Care

1. Try to control the bleeding with direct pressure. If you are not successful, or you are unable to apply direct pressure, apply a tourniquet.

2. Even if the body part has been fully amputated, there is still the possibility that it could be reattached as long as it is cared for properly. Remember to "protect it, bag it, cool it, tag it":

Protect it: Wrap the amputated part in gauze or a clean cloth.

Bag it: Place the amputated part in a plastic bag.

Cool it: Keep the amputated part cool by placing the bag on ice. Wrap the bag before cooling it so that the body part does not freeze.

Tag it: Label the container with the person's name, the date, and the time.

3. Make sure the amputated part goes with the injured person to the hospital.

Crush Injuries

Common Causes

A crush injury occurs when there is a great deal of pressure on a part of the body, such as when a body part is squeezed between two heavy objects.

What to Look For

If the person is still trapped under the object(s) or between two objects, it is likely that a crush injury has occurred. Other signs and symptoms of a crush injury include the following:

- Internal bleeding
- Shock
- Deformity
- Pain

What to Do

Call

Call EMS/9-1-1 and get an AED.

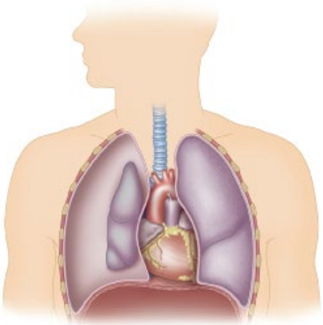
Care

1. If the object is restricting the person's breathing, or the object is crushing the person's head, neck, chest, or abdomen, remove the object if it can be safely removed. If it is crushing another body part, leave the object where it is until EMS personnel arrive.

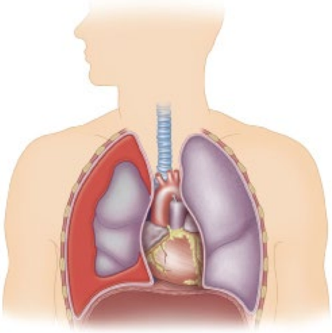
Chest Injuries

Chest injuries can impact the ribs and/or the organs they protect. They can involve open wounds or internal injuries. If ribs are broken, they can penetrate the skin or the lungs, causing additional injury.

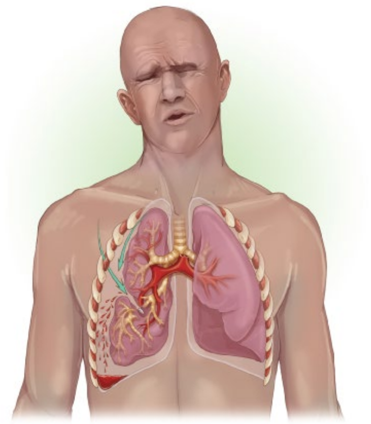
Injuries to the chest can result in conditions known as pneumothorax (air in the chest) or hemothorax (blood in the chest).



Pneumothorax is a condition in which air enters the chest cavity from the wound site but doesn't enter the lung. The air in the chest cavity presses against the lung, causing it to collapse.



Hemothorax is a condition in which blood accumulates in the chest cavity from the wound site but doesn't get into the lung. Because blood takes up space in the chest cavity, the lung can't expand effectively.



Penetrating Chest Injuries

Penetrating chest injuries cause varying degrees of internal and external bleeding. Additionally, if the object penetrates the ribcage, air can pass freely in and out of the chest cavity and the person can no longer breathe normally. This is sometimes referred to as a sucking chest wound, and can result in a breathing emergency.

What to Look For

The following are signs and symptoms of a penetrating chest injury:

- Difficulty breathing
- Gasping
- Bleeding from an open chest wound that may bubble at the injury site
- A sucking sound coming from the wound with each breath
- Severe pain at the site of the injury
- Coughing up blood

What to Do

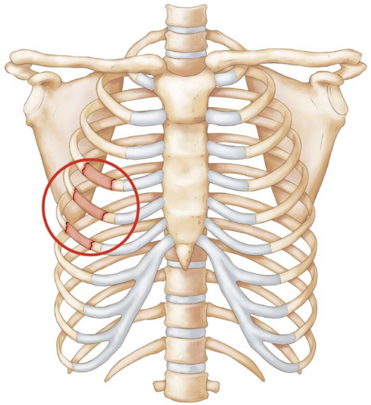
Call

Call EMS/9-1-1 and get an AED.

Care

1. Have the person rest in a comfortable position. If the person wants to lie down, help the person into the recovery position with the injured side toward the ground.
2. If the wound is bleeding profusely, applying pressure or gauze dressings may be necessary to stop the bleeding. If bleeding is minor, do not apply pressure or a dressing.

! To avoid the build-up of air between the chest wall and the lung (tension pneumothorax), air must be able to exit an open chest wound. If you must apply a dressing, ensure that it does not become saturated with blood, as this will prevent air from escaping. If the dressing becomes saturated, it must be changed.



Blunt Chest Injuries

A blunt chest injury is caused by a crushing force that does not create a wound in the chest wall. The most common blunt chest injury is a broken rib. Incidents that may result in blunt chest injuries include motor vehicle collisions, falls, and sports injuries.

If multiple ribs break in multiple places, this can produce a loose section of the ribcage that does not move normally with the rest of the chest during breathing. This is called flail chest. Normally, the loose section will move in the opposite direction to the rest of the chest. This is called paradoxical movement. Flail chest can also involve the sternum.

What to Look For

The signs and symptoms of a blunt chest injury include the following:

- Pain
- Deformity or swelling
- Guarded, shallow breathing
- Bruising at the site
- A grinding noise

What to Do

Call

Call EMS/9-1-1.

Care

1. Keep the person as still as possible, as a blow to the chest may have caused head, neck, and/or spinal injuries.
2. Give the person something bulky (such as a towel) to hold against the chest, as this can make it easier to breathe.

Abdominal Wounds

The abdomen is the area immediately under the chest and above the pelvis. It is easily injured because it is not surrounded by bones. The abdomen contains important organs such as the liver, which can be easily damaged. Injuries to the abdomen are more likely to produce life-threatening internal bleeding.

What to Look For

The signs and symptoms of serious abdominal injuries include:

- Bruising
- Nausea and vomiting (sometimes vomit containing blood)
- Pain, tenderness, or a tight feeling in the abdomen
- Distension in the abdomen
- Organs possibly protruding from the abdomen
- Shock

What to Do

Call

Call EMS/9-1-1 if you suspect life-threatening internal bleeding or if there are organs protruding from the abdomen.

Care

If organs are not protruding, care for any injuries as you would care for them on any other part of the body.

If there are organs protruding:

1. Do not apply direct pressure or attempt to push organs back into the abdomen.
2. Cover the protruding organs with moist, sterile dressings.
3. Loosely cover the dressings with plastic, if available.
4. Cover the person with a towel or blanket to keep him or her warm.

Blast Injuries

Blast injuries occur when pressure waves generated by an explosion strike and pass through the body's surfaces. Blasts release large amounts of energy in the form of pressure and heat. Injuries can include loss of hearing, pneumothorax, internal bleeding, and organ damage. Thermal burns may also occur from exposure to heat. The extent of blast injuries may be difficult to identify because sometimes there are no visible external injuries, and indicators of internal injuries may not be apparent. A person with suspected blast injuries should be monitored and reassessed frequently while waiting for EMS personnel to arrive.

There are four mechanisms of injury resulting from blasts:

1. Pressure or heat injuries from the blast itself.
2. Injuries from flying debris (shrapnel).
3. Trauma from being thrown by the blast.
4. Injuries or illnesses caused by hazardous material being dispersed by the blast.

What to Do

Call

Call EMS/9-1-1 and get an AED.

Care

1. Keep the person still.
2. Treat any obvious external injuries.
3. Constantly monitor the person's condition as it may change rapidly.

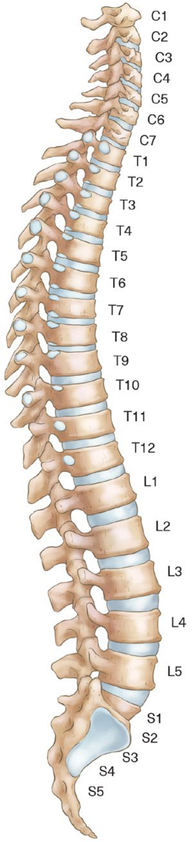
9 Head, Neck, Spine, and Pelvis Injuries

Traumatic events such as falling from a height, getting hit by a motor vehicle, or sustaining a powerful blow to the head can cause head, neck, spine, or pelvis injuries. Injuries to the head or spine can damage bones, such as the skull or vertebrae, and tissues, such as the brain and the spinal cord. Head injuries are often accompanied by spinal injuries, but a person with a superficial head wound may also have an underlying head injury.

Depending on the nature and severity of the injury, the person may be left with permanent damage (e.g., paralysis, speech impairment, memory problems, or behavioural conditions). Although injuries to the head and spine account for a small percentage of all injuries, they cause more than half of the fatalities.

The Neck and Spine

The spine is a strong, flexible column of small bones called vertebrae; it supports the head and the torso. The spine surrounds and protects the spinal cord, which is a bundle of nerves that runs between the brain and the lower back.



The spine is divided into four regions:

1. The cervical (neck) region, which consists of the C1 to C7 vertebrae.
2. The thoracic (chest) region, which consists of the T1 to T12 vertebrae.
3. The lumbar (lower back) region, which consists of the L1 to L5 vertebrae.
4. The sacrum (hip) and coccyx (tailbone) region, which consists of the S1 to S5 vertebrae and the four fused vertebrae that form the tailbone.

Severe injuries can move or break the vertebrae so that they squeeze or cut the spinal cord, causing temporary or permanent paralysis, or even death. Damage can also occur if the injury causes the soft tissue of the spinal cord to swell, compressing it against the hard bone that surrounds it.

Depending on the location and severity of the injury, the person may develop paralysis (the loss of movement, sensation or both) in body parts below the injury. Paraplegia is paralysis that affects both legs and the lower trunk. Quadriplegia is paralysis that affects both arms, the torso, and both legs. The higher up the spine the injury occurs, the more extensive the paralysis will be.

The Brain

The brain is the centre of the nervous system. It is the master organ that controls all body functions. The brain has the consistency of gelatin, but it is cushioned from everyday bumps and jolts by the cerebrospinal fluid inside the skull. Because the skull is hard, there is not much room for the brain to move or swell.

Brain injuries can occur as a result of a blow to the head, a penetrating injury to the head (such as a bullet wound), or exposure to acceleration-deceleration forces that cause the head to snap forward and then back. A blow to the head can lead to a concussion (a traumatic brain injury that alters the way it functions), a brain contusion (bruising of the brain tissue) or a brain hematoma (bleeding into the space between the brain and the skull, which increases the pressure inside the skull and damages brain tissue).

The Pelvis

The pelvis is the part of a person's body between their abdomen and legs. It contains the intestines, bladder, and reproductive organs.

Head, Neck, Spine, or Pelvis Injury

Common Causes

Many different situations can lead to head, neck, spine, or pelvis injuries:

- Motor vehicle collisions
- Recreation and sports injuries
- Falls
- Blow to the head or back
- Violent acts, such as assault
- Sudden or awkward movements
- Direct hits or blows to a person's body
- Repetitive actions, such as jogging, typing, or lifting
- Twisting a limb

You should suspect a head, neck, spine, or pelvis injury in the following situations:

- A fall from any height greater than the height of the person
- Any diving injury (e.g., diving head-first into shallow water)
- A person found unresponsive for unknown reasons
- Any injury that involves a strong blow to the lower jaw, head, or torso (e.g., colliding with another participant while playing a sport)
- Any injury that causes a wound in the head or torso
- A motor vehicle collision or rollover
- Any injury in which a person's helmet is damaged
- A person has been struck by lightning
- A person has been electrocuted
- A person has been involved in a fight
- A person has been in an explosion
- A baby or young child was shaken

It might be difficult to determine how much damage has taken place without advanced medical assessment and diagnosis, so always treat the injury as if it is serious. The size of a "goose egg" (bump on the head) isn't necessarily an indication of the severity of a head injury. Watch for other signs of injury. If there is swelling, you can apply ice or a cold pack wrapped in fabric to the area.

Prevention

The following tips help to prevent head, neck, spine, and pelvis injuries:

- Wear safety belts with shoulder restraints when in a vehicle.
- Children and babies should always ride in Canada Motor Vehicle Safety Standards (CMVSS) approved safety seats. Make sure the seat is designed for the child's age and weight and make sure it is properly installed.
- Wear all recommended protective equipment for the activity you are engaged in (e.g., approved bicycle helmets).
- Never join in a new sport without knowing the rules and risks involved.
- Prevent falls around the home and workplace with non-slip floors, non-slip treads on stairs, handrails on staircases, rugs secured with double-sided adhesive tape, and handrails by the bathtub and toilet if necessary.
- Make sure that there is good lighting in stairways and hallways.
- If there are small children present, put gates at the top and bottom of the stairways.
- Make sure that your workplace is clean and tidy. Keep floors and aisles uncluttered and make sure that there is nothing blocking stairways, work sites, or exits.
- Drink responsibly. Alcohol is often a factor in serious motor vehicle collisions and water injuries. Alcohol slows down your reflexes and gives you a false feeling of confidence.
- Prescription drugs and common drugstore medications can make driving or operating machinery dangerous, so follow the directions on the package carefully.
- Check equipment (such as warehouse forklifts, ladders, and scaffolding) regularly for worn or loose parts.
- Use ladders carefully and correctly.
- Always be very careful around water:
  - Before diving, make sure that the water is deep enough, and check for objects below the surface, such as logs or pilings. Pools at homes, motels, or hotels may not be safe for diving.
  - Enter unknown water feet first.
  - Enter above-ground pools feet first.
  - When bodysurfing, keep your arms out in front of you to protect your head and neck.

What to Look For

The signs and symptoms of a head, neck, or spinal injury depend on the nature and location of the injury. Bleeding inside the skull can happen slowly, so the signs may take time to appear. The severity of a head, neck, or spinal injury can only be determined through an evaluation by medical personnel: you should always assume that such an injury is serious.

The only accurate way to diagnose a fracture is with an X-ray. Because a First Aider cannot diagnose what type of injury someone has, you should provide care for a suspected pelvis injury as if it is a fracture.

The following signs and symptoms alone do not always indicate a serious head, neck, or spinal injury, but you should call EMS/9-1-1 if any of these are present:

- Changes in level of responsiveness, awareness, and behaviour
- Drowsiness, confusion, or disorientation
- Severe pain or pressure in the head, neck, or back
- Blood or other fluids in the ears or nose
- Heavy external bleeding from the head, neck, or back
- Unusual bumps, bruises, or depressions on the head, neck, or back
- Seizures

- Impaired breathing or vision
- Nausea or vomiting
- Unequal pupil size
- Persistent headache
- Partial or complete loss of movement of any body part without an obvious traumatic cause (e.g., inability to move a limb that does not appear to be injured)
- Back pain, weakness, tingling, or loss of sensation in the hands, fingers, feet, or toes
- Unusually positioned neck or back
- Dizziness and/or loss of balance
- Bruising of the head, especially around the eyes and behind the ears
- Loss of bladder or bowel control
- Behaviour similar to that of a person under the influence of alcohol or drugs (e.g., stumbling, memory loss, speech problems)

The signs and symptoms of a pelvis injury include:

- Deformity
- Swelling, which could be due to internal bleeding
- A pool of blood under the skin (hematoma) or bruising at the site of the injury
- Pain, difficulty, or both in moving the injured body part
- An inability to walk or stand
- A leg that looks shorter, twisted, or bent
- A broken bone or bone fragments sticking out of the skin
- A snapping or popping sound at the time of the injury
- A feeling or sound like the bones in the injured area are grating
- A limited ability or no ability to use the injured body part
- Muscle cramps
- Numbness or tingling
- Signs of shock

What to Do

It is imperative that a person with a head, neck, spine, or pelvis injury remain as still as possible, unless keeping him or her in the position found would actually put the person's life at risk (if the scene is becoming unsafe, for example, or if you must roll the person over to put pressure on life-threatening bleeding). As always, an unresponsive person should be rolled into the recovery position. The risk of further damage to the spine is less serious than the risk of the person's airway being obstructed. You should take steps to discourage the person from moving reflexively. For example, if the person is lying on the ground, approach from a direction that allows the person to see you without turning his or her head. You should also tell the person to respond verbally to your questions rather than nodding or shaking his or her head.

If the person is unresponsive, you must check his or her ABCs, but this can often be done without moving the person. If you can see chest movement or can hear the person moaning, crying, or coughing, that means the person is breathing. If the person is wearing a helmet, leave the helmet in place. If the helmet prevents you from reaching the person's mouth to give breaths, do compression-only CPR. If a child is in a car seat, leave them in place.

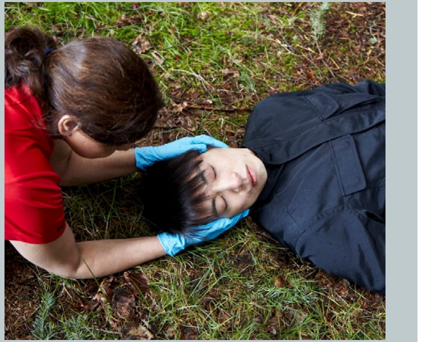
Call

Call EMS/9-1-1 and get an AED.

Care

For a head, neck, or spinal injury:

1. Restrict movement of the head, neck, and spine as much as you can until EMS personnel arrive:
    - If the person is responsive, instruct him or her to keep as still as possible. If the person is unable to do so, manually support the head in a position that limits movement.

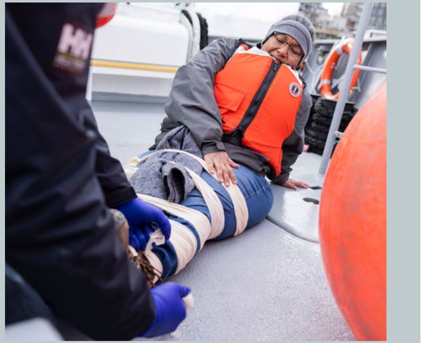


2. Keep the person in the position he or she was found, unless the person is in immediate danger or has life-threatening conditions that need immediate attention.
3. If blood or other fluid is in the ear canal or draining from the ear:
    - Let the ear drain. Do not apply direct pressure. Do not move the person unless it is absolutely necessary.
    - Cover the ear loosely with a sterile dressing.

For a pelvis injury:

If you must move the person to get medical help or if the EMS response will be delayed, you can keep their legs still by placing padding between their legs and tying them together.

1. Help the person to lie down on their back. Ask them to stay as still as possible and keep their legs straight.
2. Check the person's circulation below the injured area.
3. Using the natural gap behind the knees or ankles, carefully slide at least 3 pieces of wide fabric under both legs. Avoid moving the injured person's pelvis.



4. Fold a soft, thick object, such as a blanket, into a shape long enough to go from the person's groin to their ankles.
5. Place the soft object between the person's legs.
6. Attach the fabric. Avoid tying any fabric directly on top of joints.
    a. Attach the piece of fabric closest to the pelvis.
    b. Attach the fabric closest to the knee.
    c. Attach the fabric nearest the ankle, in a figure eight around the sole of both feet.
7. Check the person's circulation below the injured area again.
8. Check the person's ABCs and watch for signs of shock.

When to Move a Person with a Head, Neck, Spine, or Pelvis Injury

You may need to move a person with a head, neck, spine, or pelvis injury in the following situations:

- The person's airway is blocked (for example, if the person vomits)
- The scene of the emergency becomes dangerous
- There is no organized EMS response in the region (for example, if the injury occurs in a very remote area)

When moving the person, try to keep the head, neck, and spine in the position you found them. Avoid unnecessary jostling and move the person only as much as is necessary.

Remember, it is more important to treat life-threatening conditions than it is to keep the person still. If the person has a potential spinal injury and is not breathing, opening the airway and starting CPR immediately are more important than protecting the spine from further damage.

Concussion

A concussion is a subset of traumatic brain injuries (TBI) that involve a temporary alteration in brain function. An impact to the head or upper body can create forces that cause the brain to "shake" inside the skull. This shaking can cause the brain to collide with the bony structures that make up the skull's inner shell (sometimes causing swelling and/or bleeding), or to rotate within the skull, which can shear or tear the brain nerve fibres and sometimes stretch and damage the brain cells.

A concussion can result from even a seemingly minor bump, blow, or jolt, and may be difficult to recognize because the signs and symptoms may not be immediately obvious. Concussions are evolving injuries, with the effects intensifying, dissipating, or changing unexpectedly in the days and weeks following the event of the injury. Depending on the severity of the concussion, signs and symptoms can last for days, weeks, or even months. The majority of concussions, however, resolve in a short period of time.

It is not fully known exactly what happens to brain cells in a concussion, but a change in the brain's chemical function seems to be involved in the process. As a result, concussions are rarely visible in neuroimaging scans. The exact duration of this altered function is not yet known, but during the recovery period the brain is more susceptible to further injury. A person who has had one concussion is at increased risk for future concussions. As a result, it is critical that as soon as someone is suspected of having a concussion, they are removed from activity and seek care from a qualified medical professional. A person does not need to become unresponsive to have incurred a concussion.

Common Causes

A concussion may be caused by:

- A blunt force to the head or jaw
- An explosion
- Whiplash
- A forceful blow to the body
- Shaking (in the case of a baby)

What to Look For

Signs and Symptoms of a Concussion

Thinking and Remembering	Physical	Emotional	Sleep
• Confusion • Clouded or foggy mindset • Seeming stunned or dazed • Temporary memory loss regarding the event of the injury • Difficulty concentrating • Difficulty remembering or recalling events • Slowed reaction times	• Neck pain, headache, or pressure within the head • Fatigue, low energy, or feeling “foggy” • Short-term loss of responsiveness • Dizziness or loss of balance • Double or blurred vision, or “seeing stars” • Ringing in the ears • Nausea or vomiting • Mumbled or indistinct speech • Sensitivity to light and/or noise • Not feeling “right” • Seizure or convulsion	• Irritability • Sadness or depression • Heightened emotions • Nervousness or anxiety • Personality changes	• Drowsiness • Sleeping more or less than usual • Difficulty sleeping

Concussions are often left untreated because the symptoms are not always recognized by the person who has been injured, and the signs are not always obvious to others. There may also be personal or external pressures to continue participating in the activity at hand (e.g., workplace requirements, social events, or sporting activities), instead of avoiding such aggravating factors. Continued participation in activities that provoke symptoms during either the acute or the recovery stage can re-aggravate the condition due to raised levels of exertion. To avoid this, it is important that the person seek medical attention following a blow to the head, neck, or upper body with any concussion symptoms. Cessation of physical activity and the promotion of cognitive rest (reducing “screen time” and other activities that require concentration) are critical to the resolution of concussion injuries.

Concussion Signs and Symptoms in Children and Babies

Identifying signs and symptoms of a concussion in a child is more difficult than for an adult. It is particularly difficult for a child or baby, since the child or baby may not be able to speak to describe the symptoms. In addition to the standard signs of a concussion, the child or baby may exhibit the following signs, which are more specific to this age group:

- Disturbed sleeping and eating patterns
- Excessive crying
- Disinterest in activities or favourite toys

Children may also express simply “feeling off” or “not feeling right” following a physical impact. This is also a possible symptom of a concussion.

What to Do

Call

Call EMS/9-1-1 if the person has the following more severe signs and symptoms of a concussion:

- Repeated or projectile vomiting
- Loss of responsiveness of any duration
- Lack of physical coordination (e.g., stumbling and unusual clumsiness)
- Confusion, disorientation, or memory loss
- Changes to normal speech
- Seizures
- Vision and ocular changes (e.g., double vision, dilated pupils, or unequal pupil size)
- Persistent dizziness or loss of balance
- Weakness or tingling in the arms or legs
- Severe or increasing headache

Care

If you think a person has sustained a concussion, advise the person to stop the activity he or she was engaged in when the incident occurred. If the person sustains an injury that causes a jolt or blow to the head or body, and then displays any signs and symptoms of a concussion, you should assume that a concussion has occurred. The person should follow up with a qualified healthcare provider as soon as possible for a full evaluation. A healthcare provider is best able to evaluate the severity of the injury and make recommendations about when the person can return to normal activities. While rare, permanent brain damage and death are potential consequences of failing to identify and respond to a concussion in a timely manner. Prompt recognition of when a potential concussion injury has occurred, immediate removal from the activity, and appropriate follow-up care are key elements in preventing catastrophic consequences.

Anyone who exhibits more concerning signs and symptoms requires immediate medical evaluation. An injury that causes a concussion may also trigger bleeding in or around the brain, leading to symptoms like extended drowsiness and confusion. This type of bleeding can be life-threatening. The person must be monitored in the immediate hours after the injury to ensure that the symptoms do not progress or worsen, as this can indicate additional brain injuries that require emergency care.

Follow-Up Care for Concussions

It is important that the person seek medical advice from a doctor, ideally one who specializes in concussions, since signs and symptoms can escalate in the days or weeks following the injury. A person who has suffered a concussion should not participate in any physical activities until a doctor gives permission to do so. Activities that require concentration (e.g., reading) and visual stimulation, such as working on a computer, texting, etc. should also be reduced to allow the brain the opportunity to recover from cognitive stressors. When given permission from a doctor, it is important to resume all of these activities gradually and be monitored by a medical professional.

A person recovering from a concussion may not be able to effectively monitor his or her own symptoms, and may not make the best decisions about things like rest, sleep, and limiting visual stimulation. It is crucial that the person's family members, caregivers, friends, or colleagues note any changes in his or her sleep habits or physical, cognitive, or emotional behaviour, as any of these can indicate that the recovery phase has been compromised. These people can also have a positive impact on concussion recovery by supporting the person and encouraging him or her to follow the concussion recovery plan outlined by the doctor.

Proper management of the person's signs and symptoms by a qualified healthcare provider will help to avoid future problems that may lead to permanent issues and a diminished quality of life. If treated improperly, concussions can cause a wide range of functional long-term changes affecting thinking, sensation, language, and/or emotions. Concussions can also cause long-term neurological conditions, such as seizure disorders, and, in the most severe cases, death.

Shaken Baby Syndrome

Shaken Baby Syndrome (SBS) refers to a variety of injuries that may result when a baby or a young child is violently shaken. This causes the brain to move within the skull, forcing blood vessels to stretch and tear. SBS is most associated with babies and toddlers, but can occur in children up to 5 years old.

SBS is the most common cause of mortality in babies. It is the most frequent cause of long-term disability in babies and young children, and it can cause permanent brain damage. SBS differs from other forms of physical abuse in that it is frequently a single event and there may be no obvious sign of injury.

Often there is no intent to harm the baby. Inconsolable crying is the most common trigger that leads a person to shake a baby. When trying to console a crying baby, never shake the baby, no matter what. Instead, place the baby face-up in a safe place and let the baby cry. Take a few deep breaths and then try again to soothe the baby. Other common triggers are feeding problems and difficulties with toilet training.

Feelings of anger and frustration can be overwhelming. However, shaking a child or baby is never appropriate. If you feel like you might lose control, stop! Take a break, never shake. Place the child in a safe place and take a time-out for as long as it takes you to feel calm. Talk to someone you trust about your feelings. If you ever feel you may hurt a baby, call for help: a family member, neighbour, or local crisis line can provide emotional support and help you to find a solution.

What to Look For

While there may be no visible physical signs of injury, some signs of SBS include the following:

- Unexplained injuries (e.g., bruising or broken bones, especially skull, rib, and long-bone fractures)
- Bruising, usually in or around the eyes or mid-body area
- Bleeding or clear fluid coming from the ears and/or nose
- Minor neurological problems (e.g., irritability, lethargy, tremors, and vomiting)
- Major neurological problems (e.g., seizures, unresponsiveness, and death)

What to Do

Call

If you suspect a baby has SBS, call EMS/9-1-1.

Care

Treat any injuries you find. Avoid accusations and interrogation.

10 Bone, Muscle, and Joint Injuries

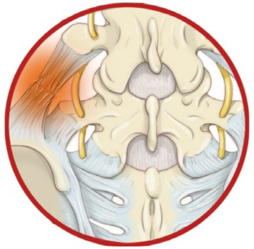
Bones are strong, hard, dense, tissues that come in many different sizes and shapes. More than 200 bones make up the skeleton, creating the framework for the body. Muscles are soft tissues that can contract and relax. Most muscles are skeletal muscles, which are attached to bones by tendons and move the body when they receive signals from the brain. A joint is formed where two or more bones are held together by ligaments that allow movement.

Bones, muscles, and joints have many jobs:

- Supporting the body
- Protecting internal organs
- Allowing movement
- Storing minerals
- Producing blood cells
- Producing heat through movement

There are four basic types of bone, muscle, and joint injuries:

Sprain: Occurs when a ligament is stretched, torn, or damaged. Ligaments connect bones together at the joints. Sprains most commonly affect the ankle, knee, wrist, and finger joints.



Strain: Occurs when a tendon or muscle is stretched, torn, or damaged. Tendons connect muscles to bones. Strains are often caused by overworking a muscle (e.g., by lifting an overly heavy object or by repetitively performing the same action). They usually involve the muscles in the neck, back, thigh, or the back of the lower leg.

Dislocation: Occurs when the bones that meet at a joint move out of their normal position. This type of injury is usually caused by a violent force that tears the ligaments, allowing the bones to move out of place.

Fracture: A complete break, chip, or crack in a bone. Fractures can be open (if the end of the broken bone breaks through the skin) or closed (the broken bone does not break through the skin). Open fractures are also called “compound fractures.”

! First Aiders cannot tell the difference between different types of bone, muscle, and joint injuries. You should treat any suspected bone, muscle, or joint injury the same way (that is, as if it were a fracture).

Muscle Cramps

A muscle cramp is a painful condition that can be caused by heavy exercise or staying in the same position for too long. You can usually stop the pain by stretching and massaging the area with the cramp, resting, or changing position.

Bone, Muscle, or Joint Injury

Common Causes

Bone, muscle, and joint injuries can occur in many ways. The causes include the following:

- Falls
- Awkward or sudden movements
- Direct blows to the body
- Repetitive actions or forces, such as jogging
- Degenerative bone disorders (osteoporosis)

Prevention

The following tips help prevent bone, muscle, and joint injuries:

- Always wear seat belts and shoulder restraints when in a vehicle, and ensure that all passengers do the same.
- Secure younger children in Canada Motor Vehicle Safety Standards (CMVSS) approved and properly installed child-restraint systems (e.g., car seats and booster seats).
- Wear all safety equipment that is required or recommended (e.g., helmets, goggles, and pads).
- Put non-slip adhesive strips or a mat in the bathtub and shower stall.
- Stretch before exercising.
- Avoid over-exertion and take breaks often. Children should learn their limits and rest when they are too tired or frustrated to continue safely.
- Build strong bones by exercising regularly and by getting enough calcium and vitamin D.

Falls are the leading cause of injuries among the elderly. Reduce the risk with safety measures such as:

- Good lighting
- Sturdy railings on staircases
- Non-slip floors and rugs

What to Look For

The signs and symptoms of bone, muscle, and joint injuries may include the following:

- Pain, deformity, swelling, or bruising
- Limited or no use of the injured body part
- A broken bone or bone fragments sticking out of the skin
- A sensation or sound of bones grating
- Possible muscle cramps
- The sound of a snap or a pop when the injury happened
- Shock

What to Do

The person may be anxious and in a lot of pain. In most cases, the best thing that you can do is keep the person comfortable and prevent further injury until the person receives medical attention. To avoid damaging nerves, blood vessels, and tissues, do not move the injured body part.

When caring for an open fracture, your first priority is to stop any bleeding. Provide care as you would for any other open wound.

Call

Bone, muscle, and joint injuries range from very minor to life-threatening, so you must determine whether there is a need to call EMS/9-1-1. In general, if the injury seems severe or the person is in a significant amount of pain, you should call.

You should always call EMS/9-1-1 and get an AED if:

- There is a problem with the ABCs.
- The injury involves the head and/or spine.
- You suspect that there may be multiple injuries.
- There are injuries to the thigh bone or pelvis.
- The area below the injury is a different colour than usual or cold to the touch.
- The area below the injury is numb.
- The person has an altered level of responsiveness.
- A broken bone is protruding through the skin.
- It is not possible to safely or comfortably move the person to a vehicle for transport to a healthcare facility.

Care

Treat the injury using the RICE method:

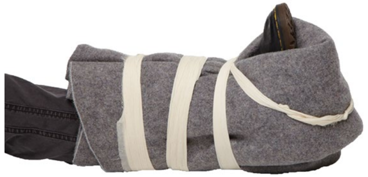
R	**Rest —** Have the person stop any current activities and rest without moving or straightening the injured body part.
I	**Immobilize —** If you need to move the person or if EMS response will be delayed, immobilize the injured area in the position in which it was found by creating a splint. Otherwise, keep the person still and do not splint the injury.
C	**Cool —** If it does not cause the person any discomfort, cool the injured area to reduce swelling and pain. Apply the cold source for 20 minutes of every hour, for as long as it continues to help ease the person's pain (up to 48 hours). Do not rub the ice or cold pack on the injured area. If you use ice, put some sort of thin, dry cloth or pad between it and the person's bare skin to avoid freezing the skin.
E	**Elevate —** Keep the injured area above the level of the heart, if possible. However, do not raise the injured area if moving it will cause pain.

Splinting Guidelines

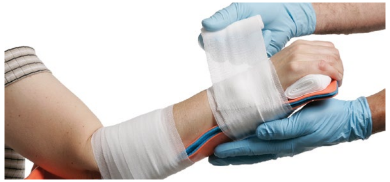
Splinting involves securing an injured bone or joint to keep it from moving, which reduces the risk of further injury and helps reduce pain. However, you should apply a splint only if you must move a person to get medical help or if the EMS response will be delayed.

Common items such as rolled newspapers, scarves, belts, and pillows can be used to improvise slings and splints if commercial versions are not available. Medical tape and medical braces can also be used to support strains and sprains.

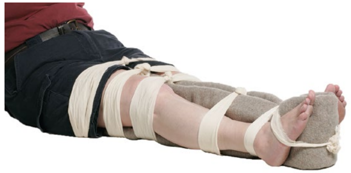
There are four types of splint:



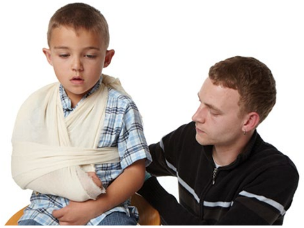
Soft splints are soft, bulky objects (e.g., a folded blanket, towel, pillow, or bandage).



Rigid splints are hard, fixed objects (e.g., a board, a rolled newspaper, a tree branch).

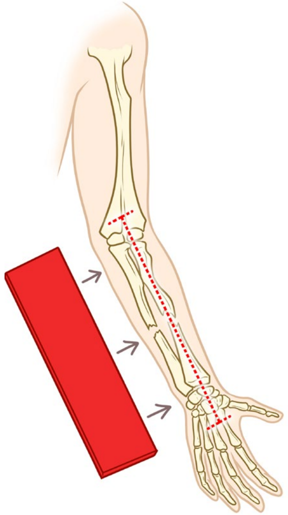


Anatomical splints use another body part for support (e.g., immobilize an injured leg by securing it to the uninjured leg).



Slings use cloth looped around the neck to support an upper extremity (e.g., the arm or wrist).

Applying a Splint

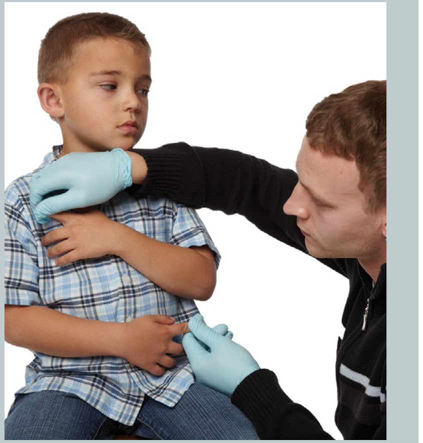


No matter what type of splint you use, follow these steps:

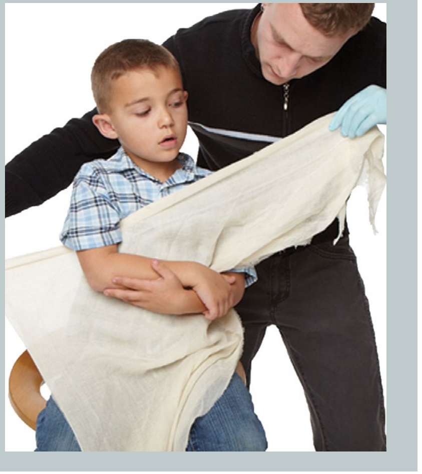
- Check the temperature and colour of the skin below the injured area before and after splinting. The area should be warm, indicating good circulation.
  - If the area is cold before splinting, call EMS/9-1-1 if you have not already done so.
  - If the area is warm before splinting and cold afterwards, the splint may be too tight. Loosen it gently, and reassess to see if circulation has been restored.
- When possible, splint the injured part in the position in which it was found. Do not try to straighten or move the body part.
- Make sure the splint is long enough to extend above and below the injured area:
  - For bone injuries, immobilize the joint above and below the site of the injury.
  - For joint injuries, immobilize the bones above and below the site of the injury.
  - If you are not sure what is injured, include both the bones and the joints above and below the injured area in the splint.
- Always pad a rigid or anatomical splint to make the person more comfortable.
- Remove any jewellery (especially rings) that the person is wearing below the site of the injury, as swelling is likely to occur.

Applying a Regular Sling for an Arm Injury

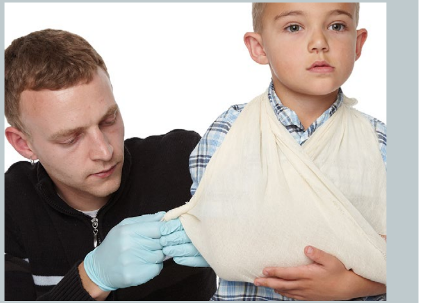
1. Check the person's circulation by comparing the warmth and colour of the fingers on the injured side with the other hand, and ask if the person has any numbness or tingling in the fingers.
2. Have the person support the injured arm, holding it across the body.



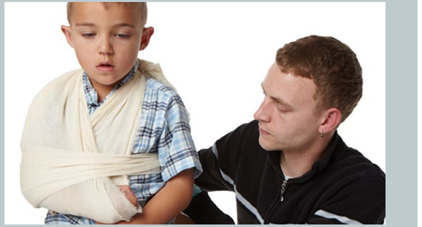
3. Slide the open triangular bandage between the injured arm and the body. The corner of the triangular bandage should extend past the elbow. The opposite side (the base of the triangle) should be running vertically, parallel to the edge of the body with the upper point over the shoulder.
4. Take the bottom end of the bandage and place it over the opposite shoulder.

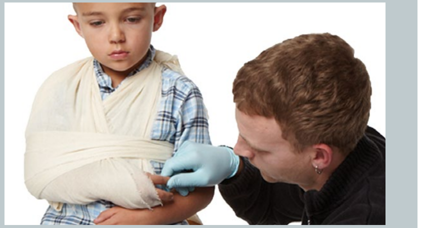


5. Tie the bandage toward one side of the neck, not at the back, to reduce discomfort from the knot.
6. Secure the elbow by twisting, tying, or pinning the corner of the bandage.
7. Apply a binder (as described below).



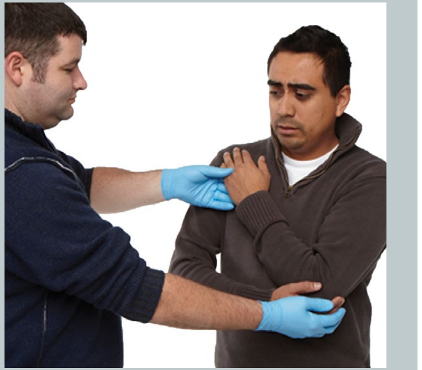
8. Recheck circulation. Slings should fit tightly enough to restrict movement, but not be so tight that blood flow is affected. If fingers are bluish or cold or if the person feels numbness and tingling, loosen the bandages. If loosening the bandages does not improve circulation, call EMS/9-1-1 and get an AED immediately.



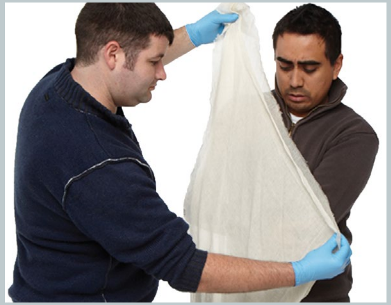


Applying a Tube Sling

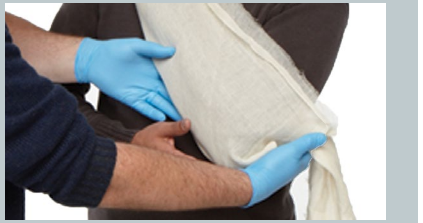
1. Check the person's circulation by comparing the warmth and colour of the fingers on the injured side with the other hand, and ask if the person has any numbness or tingling in the fingers.
2. Have the person hold the arm of the injured side across the body with the fingers touching the opposite shoulder.

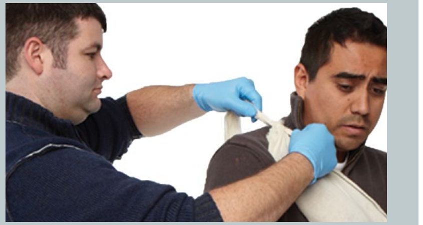


3. Place the open triangular bandage over the forearm and hand with the base parallel to the body and the opposite point extending past the elbow.
4. Support the forearm and gently tuck the lower edge of the bandage under the arm, from the hand to the elbow.

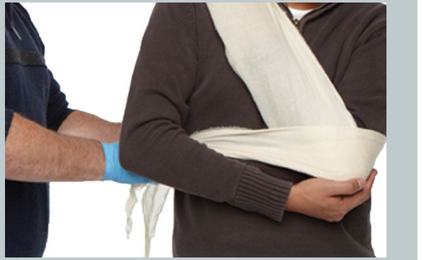


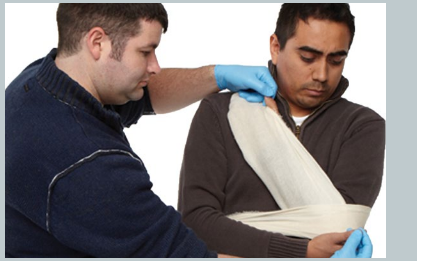
5. Twist the end of the bandage hanging below the elbow several times to secure the arm, then bring it around and up the back to meet the other end of the bandage near the person's neck.
6. Adjust the height of the sling to make sure it is supporting the arm.
7. Secure the sling by tying the two ends together in the hollow of the neck on the uninjured side.





8. Pad between the arm and the body, in the natural hollow, with soft, firm material.
9. Apply a binder (as described on the following page).
10. Recheck circulation. Slings should fit tightly enough to restrict movement, but not be so tight that blood flow is affected. If fingers are bluish or cold or if the person feels numbness and tingling, loosen the bandages. If loosening the bandages does not improve circulation, call EMS/9-1-1 and get an AED immediately.





Applying a Binder for an Arm Injury

A binder is used in addition to a sling and secures an arm in a sling to the body. This provides additional support by creating anatomical support in addition to the sling.

1. Wrap a broad bandage around the injured arm and the body.
2. Tie the bandage snugly at the uninjured side.
3. Recheck circulation. The binder should fit tightly enough to restrict movement, but not be so tight that blood flow is affected. If fingers are bluish or cold or if the person feels numbness and tingling, loosen the bandages. If loosening the bandages does not improve circulation, call EMS/9-1-1 and get an AED immediately.

11

Sudden Medical Emergencies

An acute illness is one that strikes suddenly and usually only lasts for a short period of time. A chronic illness is an illness that a person lives with on an ongoing basis and that often requires continuous treatment to manage. When a person becomes suddenly ill, it may be the result of an acute illness, or it may be an acute flare-up of a chronic condition.

Signs and symptoms such as difficulty breathing, pain that is persistent or severe, problems seeing or speaking, problems with sensation or movement, seizures, or unresponsiveness require a call to EMS/9-1-1. If you are unsure about the severity of the illness, it is better to call for help early than to wait for the situation to progress.

Fortunately, you do not need to know exactly what is wrong to provide appropriate first aid care in a sudden medical emergency. If your initial check of the person reveals any life-threatening conditions, make sure that someone calls EMS/9-1-1 right away, and then provide care according to the signs and symptoms that you find and your level of training. Follow the same general guidelines you would for any emergency.

Fainting

Fainting is a brief period of unresponsiveness that happens when there is not enough blood flowing to the brain. If a person suddenly becomes unresponsive and then "comes to" after about a minute, he or she may have simply fainted.

Common Causes

Fainting is caused by a sudden decrease in blood flow to the brain. Usually the cause of fainting is not serious. The following are common causes of fainting:

- Pregnancy
- Pain
- Heat
- Dehydration
- Decreased blood sugar (e.g., from missing a meal)
- Standing in one position for too long without moving
- Intense emotion
- Traumatic information (e.g., news of someone's death)

Prevention

The following tips help prevent fainting:

- Keep hydrated.
- Eat at regular intervals to maintain a consistent blood sugar level.
- Get up slowly from sitting or laying down.

Fainting may be preceded by a change in skin colour, dizziness, sweating, or nausea. If you think that someone is about to faint, have the person sit or lie down.

What to Do

Call

Call EMS/9-1-1 and get an AED if the person is unresponsive for more than a few minutes, the person is pregnant, the person's medical history is unknown, or you suspect that the person fainted as a result of a serious injury or illness. If you are unsure, call EMS/9-1-1 and get an AED.

Care

1. Place the person in the recovery position.
2. Encourage the person to follow up with his or her healthcare provider.

Diabetic Emergencies

Diabetes is a chronic condition characterized by the body's inability to process glucose (sugar) in the bloodstream. An organ called the pancreas secretes insulin, a hormone that causes glucose to move from the bloodstream into the cells, where it is used for energy. In a person who has diabetes, either the pancreas fails to make enough insulin or the body's cells are unable to respond to insulin. Either situation causes glucose levels in the bloodstream to increase.

A person with diabetes may manage the condition with insulin injections or oral medication. Diet and exercise also play an important role. A person with diabetes must follow a well-balanced diet, with limited sweets and fats. The timing of meals and snacks relative to exercise and medication is important as well. People with diabetes may need to check blood sugar levels more frequently when daily routines are disrupted—for example, by illnesses or vacations—as this can cause blood sugar levels to fluctuate more than usual.

If food intake, exercise, and medication are not in balance, the person may experience a diabetic emergency. A diabetic emergency happens when the blood glucose level fluctuates outside the normal range, resulting in either hyperglycemia (too much sugar in the blood) or hypoglycemia (too little sugar in the blood).

Hyperglycemia is a condition in which lowered insulin levels result in elevated blood sugar. Hyperglycemia can result if a person eats too much food, takes too little medication, exercises less than usual, or experiences physical or emotional stress. Hyperglycemia develops slowly, so it is less likely to be a first aid emergency.

With hyperglycemia, the body's cells cannot get the sugar they need, even when there is a lot of sugar in the body. To meet its energy needs, the body breaks down other food sources, causing waste products to build up in the body and thereby making the person ill. This may also cause the person's breath to have a fruity or sweet odour. This can lead to a serious form of diabetic emergency called a diabetic coma.

Hypoglycemia occurs when the insulin level is too high relative to the level of sugar in the blood. The small amount of sugar in the blood gets used up quickly. Hypoglycemia can result if a person misses a meal or snack, exercises more than usual, vomits, or takes too much medication. With hypoglycemia, the brain does not get enough sugar to work properly; the result is an acute condition called insulin shock. Hypoglycemia develops quickly, and is the cause of most diabetic emergencies.

Common Causes

A diabetic emergency occurs when there is an imbalance between two or more of the following:

- Exercise
- Food intake
- Medication
- Insulin production

! Not all people experiencing a blood sugar emergency have diabetes.

What to Look For

The following are signs and symptoms of a diabetic emergency:

- Changes in the level of responsiveness
- Changes in behaviour, such as confusion, irritability, or aggression
- Rapid breathing
- Cool, sweaty skin
- Skin that is a different colour than usual
- Appearance of intoxication (e.g., slurred speech, difficulty walking)
- Feeling and looking ill
- Seizures

! First aid is the same for both types of diabetic emergencies (hyperglycemia and hypoglycemia).

What to Do

Call

Call EMS/9-1-1 if:

- You are unable to give the person sugar.
- The person is not fully awake.
- The person has a seizure.
- The person's condition does not improve within 10 minutes of having sugar.

Care

If the person is unable to follow simple commands, unable to swallow safely, or is unresponsive, ensure that EMS/9-1-1 has been called and place the person in the recovery position.

1. If the person is able to follow simple commands, answer questions, and swallow safely, offer 15 to 20 grams of sugar. Check the label on packaged products to determine how much of the package's contents to give. The following are the forms of sugar to give, listed in order of preference:
    - Oral glucose tablets
    - Chewable candy
    - Fruit juice
    - Fruit strips
    - Milk
    - Other forms of sugar, such as a non-diet soft drink or a spoonful of sugar mixed into a glass of water

2. Monitor the person's condition for 10 minutes:
    - If the person's condition deteriorates or does not improve within 10 minutes, call EMS/9-1-1 and administer more sugar if it is still safe to do so.
    - If the person's condition improves, recommend that he or she eat a complete meal.

If the person's condition is caused by low blood sugar, ingesting sugar will help improve his or her condition. Even if the person is experiencing hyperglycemia (too much glucose in the bloodstream), giving the person 15 to 20 grams of sugar will not cause additional harm. If a glucometer is available, having the person check his or her blood sugar will reveal whether he or she has hyper- or hypoglycemia.

! Do not give the person insulin. Only a medical professional can diagnose the cause of the emergency and be certain that insulin is the correct treatment.

Using a Glucagon Kit for a Diabetic Emergency

Some people with diabetes may carry a prescribed glucagon kit to use in case of a severe hypoglycemic emergency. Glucagon is a hormone that stimulates the liver to release glucose into the bloodstream. The glucagon kit is used only when the person is unresponsive or has lost the ability to swallow. Those who spend a significant amount of time with the person (e.g., family members, teachers, coaches, or co-workers) may receive additional training to learn how to administer a glucagon injection. If you have not received specific training in the use of a glucagon kit, you should never attempt to administer this medication.

Seizures

A seizure is an episode of abnormal electrical signals in the brain that result in temporary and involuntary disturbances in brain function, shaking or contraction of limbs (convulsions), changes in sensation, shifts in behaviour, and altered levels of responsiveness.

Common Causes

Seizures can have many different causes. One common cause is epilepsy, a chronic seizure disorder that can often be controlled with medication. Other causes of seizures include the following:

- Fevers or infections
- Head injuries
- Heat stroke
- Poisons (including drugs)
- Drug or alcohol withdrawal
- Diabetic emergencies
- Audio-visual stimulation (e.g., flashing lights)

What to Look For

The following are common signs and symptoms of seizures:

- Hallucinations
- Uncontrollable muscle movement
- Eyes rolling upward into the head
- Drool or foaming at the mouth
- Uncontrolled repetitive motions (partial seizures)

! Any one of these signs can indicate a seizure—not all seizures involve convulsions.

A person may experience an aura (an unusual sensation or feeling) before the onset of the seizure. If the person recognizes the aura, he or she may have time to tell someone what is happening and sit down before the seizure occurs.

There are many different types of seizures, and their specific signs and symptoms vary. Common types of seizures include:

Tonic-Clonic or Convulsive Seizures: Formerly called “Grand Mal” seizures. The person becomes unresponsive and has convulsions. During the tonic phase, muscles will stiffen. Then, during the clonic phase, the extremities will jerk and twitch rhythmically. Saliva that has not been swallowed during the seizure may appear as froth at the mouth. Breathing may be irregular as the respiratory muscles can be affected. A tonic-clonic seizure usually lasts one to three minutes, but may last up to five minutes. The period after the seizure is called the post-ictal phase. During this time, the body rests to recover from the seizure. The person will slowly regain responsiveness and may appear fatigued, confused, or disoriented.

Absence Seizures: Formally called “Petit Mal” seizures. The person experiences a brief, sudden lapse in responsiveness. He or she may momentarily become very quiet and have a blank stare, or appear to be daydreaming. The person may also make chewing motions, breathe rapidly, blink rhythmically, or make slight movements such as tugging at clothing. There are no convulsions with absence seizures. Absence seizures are very brief, usually lasting between two and ten seconds. There is no confusion after the seizure, and the person can usually resume full activity immediately.

Focal or Partial Seizures: These seizures begin in one specific part of the brain. The signs and symptoms of the seizure vary depending on which region of the brain is affected. Typically a focal or partial seizure will affect only one part of the body (e.g., one arm may convulse) or aspect of experience (e.g., a person’s vision could be disturbed, or a person could experience a sudden change in his or her emotional state). The person may or may not remain aware during the seizure. Some focal or partial seizures can evolve into a generalized tonic-clonic or convulsive seizure.

What to Do

Call

Call EMS/9-1-1 and get an AED if:

- You do not know the person or the person's medical history.
- The seizure lasts more than a few minutes.
- The person has several seizures in a row.
- The person appears to be injured.
- The person is pregnant.
- The person is experiencing a diabetic emergency.
- The seizure takes place in water.
- This is the person's first seizure, or the cause of the seizure is unknown.
- The person does not wake up after the seizure or is unresponsive for an extended period.
- The person has a fever.
- The person is intoxicated (due to drugs or alcohol).
- Your workplace requires you to do so.

Calling EMS/9-1-1 for People with Seizure Disorders

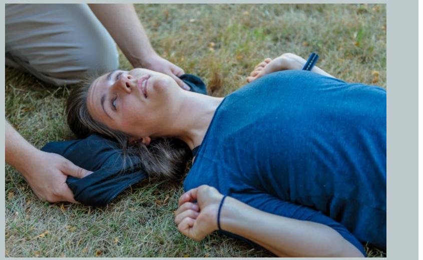
Some people have multiple seizures during a day, and will likely have a seizure treatment plan in place. The treatment plan will outline when a seizure no longer follows the normal pattern or duration for the person and when to call EMS/9-1-1. Follow the person's seizure plan if you are familiar and comfortable with it.

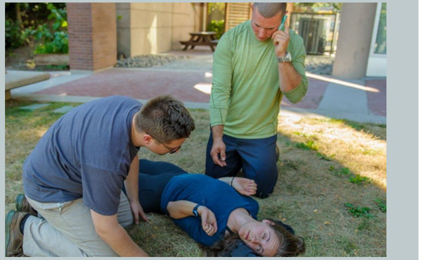
Care

! Record the time that the seizure starts and stops. If you have called EMS/9-1-1, give this information to EMS personnel when they arrive.

During the seizure:

1. Protect the person from injury by:
   - Moving furniture and other objects that could cause injury out of the way.
   - Protecting the person's head with a soft object (such as a blanket).
2. Do not try to hold the person down or stop the seizure from happening.
3. Roll the person onto his or her side, if you are able to do so safely.





After the seizure:

The person may be drowsy and disoriented for up to 20 minutes.

1. Check the person's ABCs.
2. Place the person in the recovery position if the person is breathing normally.

Although a seizure can be frightening to see, it is easy to care for a person who is having a seizure. Most seizures only last a few minutes, and the person usually recovers fully without any complications.

Febrile Seizures

Babies and young children may have seizures if their body temperatures suddenly rise. These are called "febrile seizures" and are most commonly associated with sudden high fevers, normally with temperatures over 39°C (102°F). In most cases, these seizures are non-life-threatening and do not last long.

To reduce the risk of febrile seizures in a child or baby with a high fever, you must lower his or her body temperature:

1. Remove any excess clothing or blankets.
2. Give the child or baby a sponge bath with water that is room temperature (not icy cold).
3. Give the child or baby plenty of fluids to drink to help prevent dehydration.
4. Consider giving the child or baby fever-reducing medication such as acetaminophen or ibuprofen.

If these steps do not reduce the child's or baby's temperature, seek medical attention.

Call

Call EMS/9-1-1 for a febrile seizure if:

- It is the first time that the child or baby has had a febrile seizure.
- The seizure lasts longer than 5 minutes or is repeated.
- The seizure is followed by a quick increase in body temperature.

Mental Health Emergency

First aid during a mental health emergency refers to the initial assistance provided by a trained First Aider to someone in crisis. It involves recognizing the signs and symptoms of distress and offering support until professional help arrives or the situation improves.

In Canada, suicide is one of the top ten leading causes of death, impacting people of different ages and backgrounds. If someone talks about wanting to harm themselves or has suicidal thoughts, it's crucial to act quickly. Always call EMS or 9-1-1 for immediate assistance.

What to Look For

People going through a mental health emergency may be dealing with specific disorders, such as substance abuse issues, mood disorders, anxiety disorders, or, less often, psychotic disorders. Your goal is not to diagnose the problem, but to offer immediate support to the person in crisis.

Signs and symptoms of a mental health emergency can include:

- Confusion or difficulty thinking clearly
- Trouble completing everyday tasks
- Hallucinations (such as hearing voices or seeing things that aren't there)
- Withdrawal from others or isolation
- Noticeable mood swings (for example, suddenly going from happy to sad without a clear reason)
- Any behaviour that puts the person at risk of harming themselves or others

What to Do

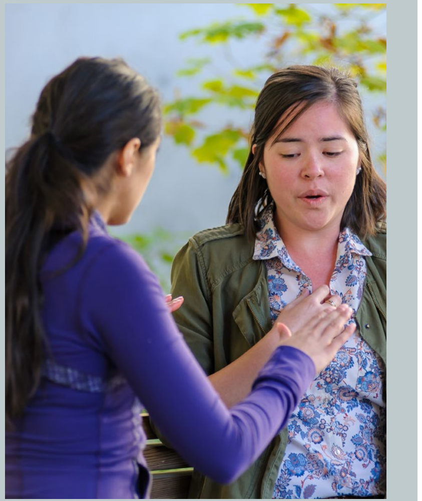
Call

Call EMS/9-1-1 **immediately** if you suspect that the person poses a risk to him- or herself or others.

Care

You can help someone in a non-life-threatening mental health emergency by:

- Minimizing distractions as much as possible
- Creating a calm atmosphere
- Recognizing the person's feelings and emotions without judging them
- Using active listening to offer reassurance, comfort, and support
- Connecting them with mental health professionals or community resources



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Support for individuals thinking about suicide is available by phone or text message through the Canada-wide **9-8-8 Suicide Crisis Helpline**, 24 hours a day, 7 days a week.

Occupational Stress Injury and Self-Care Management

According to the Canadian Centre for Occupational Health and Safety (CCOHS) (2024b), occupational (or “workplace”) stress refers to the negative physical and emotional reactions that occur when job demands do not match the amount of control that an employee has to meet them. The CCOHS states that typically, stress is caused by having high demands and not a lot of control.

According to the CCOHS (2024b), occupational stress can come from many sources or a specific event. They say that it affects both employees and employers, and that although some amount of stress is considered normal or even helpful (often called “challenge” or “positive stress”), it can lead to both mental and physical changes if it becomes too much to handle.

Self-Care Management

Self-care management means taking steps to manage the stress in your life. Managing stress is different for everyone, but these tips can help reduce it:

- **Exercise:** Regular exercise is one of the most effective ways to manage stress.
- **Talk to someone you trust:** Reaching out to a friend or family member can be very helpful.
- **Engage in activities you enjoy:** Doing things you love can lift your mood.
- **Practice breathing or grounding exercises:** These techniques can help calm you down.

The Canadian Red Cross offers several psychological first aid courses. See the Canadian Red Cross website for more details.

12 Environmental Illness

How Body Temperature Is Controlled

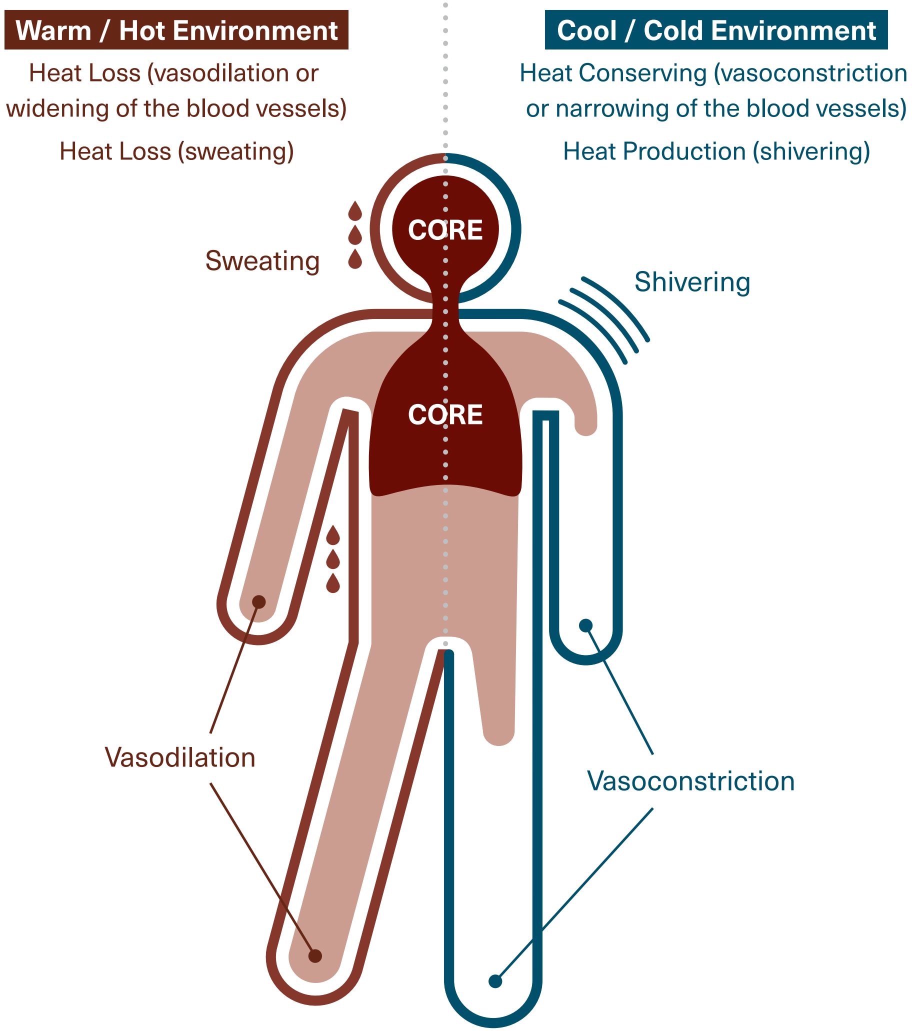
The human body's core temperature (i.e., the temperature of the heart, lungs, and brain) is normally around 37°C (98.6°F) and is maintained by balancing heat loss with heat gain.

The body generates heat by either converting food into energy or by contracting muscles (e.g., shivering, exercising). The heat produced by routine activities such as walking is usually enough to balance normal heat loss.

The Hypothalamus and Body Temperature

The hypothalamus is the part of the brain that controls thermoregulation, which is the body's ability to maintain a temperature that is within the ideal range. The hypothalamus gets temperature information from the skin and central receptors. If the body is too warm, thermoregulatory "heat loss" responses include increasing the skin's blood flow and/or sweating to facilitate evaporation. If the body is too cold, responses include decreasing the skin's blood flow and shivering, which produces heat by contracting and relaxing muscles.

Human Thermoregulation Responses


Warm / Hot Environment
Heat Loss (vasodilation or widening of the blood vessels)
Heat Loss (sweating)
Cool / Cold Environment
Heat Conserving (vasoconstriction or narrowing of the blood vessels)
Heat Production (shivering)
CORE
Sweating
Shivering
CORE
Vasodilation
Vasoconstriction

The Four Mechanisms of Heating and Cooling the Body

Heat moves from warmer areas to cooler ones through four mechanisms:

1. **Radiation:** (Warming or cooling) Involves the direct loss or absorption of heat energy through electromagnetic waves.
2. **Conduction:** (Warming or cooling) Occurs through direct contact with a solid or liquid. Heat loss due to direct contact with cold snow could be decreased by minimizing contact or increasing insulation (e.g., sitting on an insulated pad on the snow).
3. **Convection:** (Warming or cooling) Occurs when air or liquid moves across the skin. In cold air, this is known as the wind chill factor. Convective heating can also occur if warm air is blown across the skin.
4. **Evaporation:** (Cooling only) Occurs when a liquid changes to a vapour. This physical process requires heat, which means that evaporation from the skin takes heat from the surface of the body. When sweat or water (either on the skin or in clothing that is in contact with the skin) evaporates, the skin is cooled. Sweating occurs when either the skin and/or body core temperatures increase. In a cold environment, sweating should be minimized (e.g., layers of clothing should be removed before or during hard work). In a hot environment, evaporative heat loss is beneficial. However, any sweat that does not evaporate will not cause cooling. For example, when humidity is high, sweat does not evaporate as efficiently and may simply drip off the body.

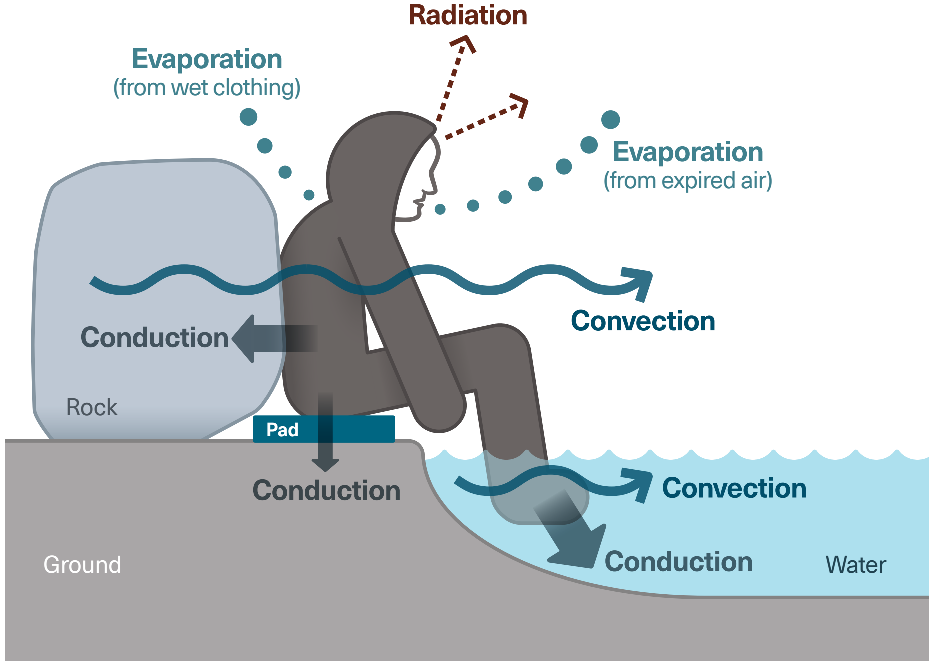
Four Mechanisms of Heat Loss

➔ **Conduction: Through direct contact with a solid or liquid.**

〜➔ **Convection: Flowing water or air removes heat.**

- - -> **Radiation: Through space (air) by infrared radiation.**

● ● ● **Evaporation: Change from liquid to gas requires energy.**



Heat-Related Illnesses

Hyperthermia occurs when the body's core temperature rises above the normal range. It results when at least one of the four mechanisms that cool the body is impaired by clothing, drugs, or disease, or is overwhelmed by internal heat production and/or external heat exposure. Heat-related illnesses will get worse without treatment and can change from one level to another very quickly.

Prevention

One of the most important actions a person can take to prevent heat-related illnesses is to drink plenty of fluids. You should drink eight 250 mL (8 oz.) glasses of fluid a day for low-exertion, routine activities and more as exertion levels increase. It is important to rehydrate regularly during longer events. If you feel thirsty, you are already dehydrated, so develop the habit of drinking fluids regularly rather than waiting for the warning signs of dehydration to appear.

The following tips will also help to prevent heat-related illness:

- Maintain a healthy level of cardiovascular fitness.
- Prior to a major event in the heat, let the body gradually acclimatize by being exposed to 1 to 2 hours of heat exertion for at least 8 days.
- Avoid being outdoors during the hottest part of the day.
- Reduce the intensity of activities as it gets hotter and don't work or exercise for too long at a time.
- Take frequent breaks in a cool or shaded area to cool off. This will help the body cope with short periods of extreme heat.
- Dress for the heat and for the intended activity.
- Make adjustments to exertion levels and work/rest cycles on hot days (e.g., schedule football practices for cooler parts of the day).
- Wear a light hat when under the sun. Wear loose-fitting light clothing that allows liquid and vapour to escape.
- Choose hydrating drinks, such as water or juice, over dehydrating ones like alcohol.

Common Causes of Environmental Illness

Environmental	Physical	Behavioural
• Heat waves, especially if there hasn't been one in recent years • High humidity (above 75%), which decreases the ability of sweat to evaporate	• Age: Babies, children, and the elderly are less able to sweat and adjust to changes in temperature • Body size and mass: Larger bodies with more fat tissue retain heat and warm up more quickly • Clothing that prevents the loss of heat and moisture (e.g., football padding) • Chronic illness • Heart disease • Skin, hormone, or nervous system diseases • Burns • Poor physical fitness	• Working or exercising too much in hot weather • Not drinking enough fluids to replace the water lost by sweating (dehydration) • Drinking too much alcohol in hot weather • Taking stimulants such as cocaine or amphetamines • Salt depletion • Fatigue

Heat Cramps

Heat cramps are painful muscle spasms, usually in the legs and abdomen, caused by loss of fluids and electrolytes as a result of sweating. While they are usually not serious, they are often the first sign that the body is beginning to overheat.

What to Look For

The following signs and symptoms can indicate heat cramps:

- Mild muscle contractions that can become severe, usually in the legs and abdomen
- Moist skin

A person with heat cramps will typically have a normal or slightly elevated core temperature (37ºC or 98.6ºF).

What to Do

Care

1. Reduce heat exposure (e.g., get into the shade) and, if possible, move the person to a cooler environment.
2. Loosen tight clothing and remove padding from the person's torso.
3. Have the person slowly sip a cool electrolyte-replacement beverage (e.g., commercial sports drink, coconut water, fruit juice, or milk). If a drink containing electrolytes is not available, have the person drink water.
4. Gently stretch and massage the cramped muscles.

When the cramps stop, the person can usually resume his or her activity as long as there are no other signs or symptoms of illness.

Heat Exhaustion

Heat exhaustion occurs when the body begins to overheat, especially when it loses more fluids and electrolytes through sweating than it gains through rehydration. It usually happens after long periods of strenuous activity in a hot environment, especially if it is humid or lacking in air circulation, as these conditions make it difficult for sweat to evaporate.

Heat exhaustion is an early indicator that the body's temperature-regulating mechanisms are being overwhelmed. As more blood flows to the skin to remove heat from the body's core, not enough blood flows to the vital organs. This causes a mild form of shock. Heat exhaustion can progress to heat stroke, so monitor the person's condition carefully.

What to Look For

The following signs and symptoms can indicate heat exhaustion:

- Normal or slightly raised core temperature (37 to 39°C, or 98.6 to 102.2°F)
- Moist skin that is flushed (red) immediately after exertion, and then turns a different colour than usual
- Dehydration or intense thirst
- Headache, nausea, vomiting, dizziness, anxiety, or fainting
- Weakness or exhaustion

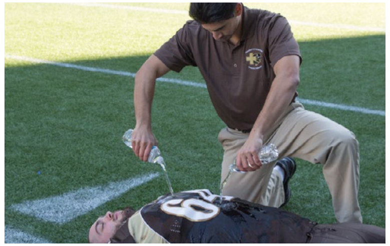
What to Do

Call

Call EMS/9-1-1 if the person is nauseous, vomiting, dizzy, anxious, has an altered level of responsiveness, or is unable to drink fluids.

Care

1. Reduce heat exposure (e.g., get into the shade) and if possible, move the person to a cooler environment.
2. Loosen any tight clothing and remove any padded clothing or equipment.
3. Pour cool water on the person's clothing and/or on towels or cloths and place them on the person's chest. Fan the person to increase evaporation. Do not dry the person's skin.
4. Apply ice or cold packs to the armpits and chest.
5. If the person is responsive and able to swallow, have him or her slowly sip a cool electrolyte-replacement beverage (e.g., commercial sports drink, coconut water, fruit juice, or milk). If a drink with electrolytes is not available, have the person drink water.
6. Advise the person not to do any more activities in the heat that day.



Heat Stroke

Heat stroke is the least common but most severe heat-related illness. It is a life-threatening emergency that occurs when the body's cooling system is completely overwhelmed and stops working.

The body stops sweating because the levels of fluid are too low. When sweating stops, the body's temperature rises quickly. When it gets too high, the brain and other vital organs cannot work properly. The person becomes unresponsive, has seizures, and can die without immediate first aid.

What to Look For

- High core temperature, above 40°C (104°F)
- Hot, dry skin
- Skin that is a different colour than usual
- Severe headache
- Altered mental status (e.g., confusion)
- Irritable, bizarre, or aggressive behaviour
- Progressive loss of responsiveness
- Rapid, weak pulse that becomes irregular
- Rapid, shallow breathing
- Vision problems
- Seizures or coma

What to Do

Call

Call EMS/9-1-1 and get an AED.

Care

1. Move the person to a cooler environment.
2. Loosen any tight clothing and remove any padded clothing or equipment.
3. Quickly lower the person’s core temperature with as many as of these methods as possible (in order of preference):
    a. Immerse the person’s forearms and hands in cool water.
    b. Pour cool water on the person’s clothing and/or on towels or cloths and place them on the person’s chest. Fan the person to increase evaporation. Do not dry the person’s skin.
    c. Apply ice or cold packs to the person’s armpits and chest.
4. Continue to use the rapid cooling methods listed above until either the person’s condition improves or EMS personnel arrive.
5. If the person is responsive and able to swallow, have him or her slowly sip a cool electrolyte-replacement beverage (e.g., commercial sports drink, coconut water, fruit juice, or milk). If a drink with electrolytes is not available, give the person water.

Assessment of a Heat-Stressed Person

	Skin	Physical	Mental	Pulse	Breathing
Heat cramps	Moist Warm	Muscle contractions (mild to severe)	Normal	Normal	Normal
Heat exhaustion	Moist Warm	Headache Weakness/Exhaustion Nausea, Vomiting Fainting	Anxiety Dizziness	Normal	Normal
Heat stroke	Dry Hot	Seizures Coma Severe headache	Altered behaviour: Irritable Aggressive Bizarre	Rapid Weak	Rapid Shallow

⬛ Caution 🟥 Call EMS / 9-1-1

Heat Cramps

Remove from heat

Loosen tight clothing, remove padding from torso

Gentle stretching

If patient is alert, provide cool drink

Heat Exhaustion

Remove from heat

Loosen tight clothing, remove padding from torso

Do not dry skin

Active Cooling

Pour water on torso

Fan skin

If patient is alert, provide cool drink

Heat Stroke

Remove from heat

Loosen tight clothing, remove padding from torso

Do not dry skin

Aggressive Cooling
(order of preference)

Immerse forearms in cool water

Pour water on torso

Fan skin

If patient is alert, provide cool drink

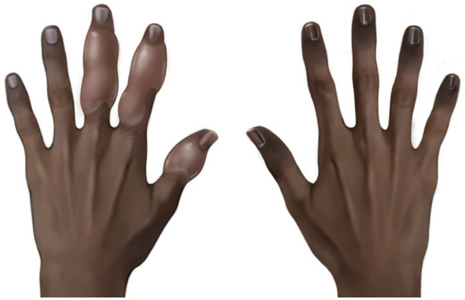
Cold-Related Illness

Cold-related illnesses are any conditions that are caused by exposure to colder temperatures. They range in severity from superficial frostbite to life-threatening hypothermia.

Frostbite

Frostbite is a local, superficial injury caused by freezing of the skin and, in more extreme cases, the underlying tissues. Extremities, such as the toes, feet, fingers, hands, ears, and nose, are particularly prone to frostbite.

There are two levels of frostbite: **Superficial frostbite** occurs when the skin freezes but the underlying tissues are unaffected. It may produce clear blisters after the tissue thaws, but little or no tissue loss typically occurs. **Deep frostbite** occurs when tissues beneath the skin (including tendons, muscles, and blood vessels) freeze. Inside the body, ice crystals and swelling begin to damage or destroy the body's cells, blood vessels, and nerves. Deep frostbite may produce dark, hemorrhagic blisters when the tissue thaws, and is more likely to result in tissue loss.



Different stages of frostbite.
From left to right: superficial frostbite, deep frostbite.

Before frostbite occurs, a person's skin may appear shiny and rosy (a condition sometimes called "frost nip"). This is a warning that frostbite is imminent. If you see these signs, advise the person to move to a warmer environment or protect his or her skin with layers of clothing.

Common Causes

Factors that increase the risk of frostbite include the following:

- Moisture on the skin
- Exposure to wind
- Insufficient insulation
- Clothing or equipment that reduces or constricts blood flow

Prevention

The following tips will help to prevent frostbite:

- Never ignore numbness: If an extremity feels numb or tingly, you must take steps to warm it immediately (e.g., put your hands under your armpits or pull your arms inside your jacket for direct skin-to-skin contact).
- Cover up vulnerable areas such as the cheeks, nose, and ears by wearing clothing that is appropriate for the weather (e.g., scarf, toque, mittens).
- Wear mittens instead of gloves when possible, as mittens provide better insulation.
- Maximize foot insulation but avoid a tight fit around the toes.
- Wear clothing in layers and adjust as necessary so that you feel warm but are not overheating and sweating.
- Keep well hydrated.
- Keep clothing dry and change out of wet clothing as soon as possible.

What to Look For

Superficial Frostbite

Signs and symptoms of superficial frostbite include:

- Hardened skin
- Skin that looks paler than the area around it
- Pain or stinging in the area, followed by numbness

Deep Frostbite

Signs and symptoms of deep frostbite include:

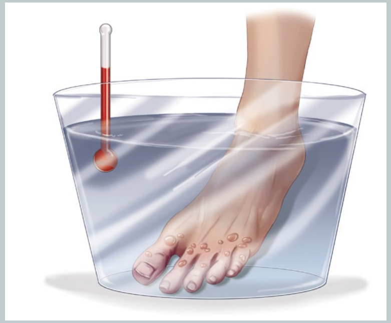
- Waxy skin that is colder than the area around it
- Skin and underlying tissue that is hard and solid to the touch
- Skin that is white, blue, black, or mottled
- Complete loss of feeling

What to Do

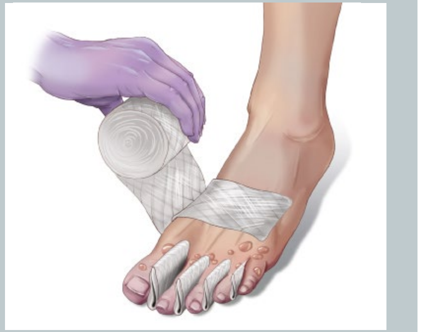
Because both hypothermia and frostbite are caused by exposure to the cold, you may be providing care for someone with signs and symptoms of both conditions. Because hypothermia is more serious, however, you should care for it first before caring for the frostbite.

✚ Care

1. If possible, remove jewellery or other extraneous material that may restrict blood flow to the affected area.
2. Thaw the area only if you are sure it will not freeze again.
3. Warm the affected area using warm water, if available (approximately 38 to 40°C [100.4 to 104°F]) or body heat (e.g., by placing the person's hands in his or her armpits or on the abdomen). You should be able to place your own hands in the water for a minute without feeling too warm.



4. If the frozen area has thawed, don't break any blisters. Protect them with loose, dry dressings. Place gauze between the fingers or toes if they are affected.



5. If possible, elevate any thawed extremities above the level of the heart.
6. Because thawing frostbite can be extremely painful, the person may wish to take an over-the-counter painkiller.
7. Rehydrate the person by providing plenty of fluids.
8. Encourage the person to seek medical attention.

Hypothermia

Hypothermia occurs when the body's core temperature (i.e., the temperature of the heart, lungs, and brain) drops to 35°C (95°F) or lower. Hypothermia becomes a life-threatening condition when the core temperature drops below 28°C (82.4°F). People with smaller body types, lower overall body weights, and lower body-fat content are much more likely to experience hypothermia. Hypothermia can occur at any time of year, with young children and the elderly being most at risk.

Common Causes

The following may lead to hypothermia:

- Sweating while outdoors in cold weather
- Cold, wet, windy conditions
- Cold-water immersion, especially in water below 10°C (50°F)
- Dehydration
- Taking medications to eliminate water from the body

Prevention

The following tips will help to prevent hypothermia:

- Prepare for activities in cold environments by wearing appropriate clothing:
  - Wear a hat and clothing made of tightly woven fibres (e.g., wool, fleece), which provide insulation and allow moisture transmission from the skin to the external environment.
  - Avoid cotton because it soaks up water and stays wet.
  - Wear clothing in layers so that they can be added or removed according to the weather conditions and exercise intensity. Remove some clothing before working to reduce the amount of sweat and keep clothing dry.
- Keep clothing dry. If clothing gets wet, change into dry clothing as soon as possible.
- Carry and consume high-energy foods that have a lot of sugar.
- Drink plenty of warm, high-calorie drinks to help fuel heat production. If high-calorie drinks are not available, drink plenty of water to at least keep from becoming dehydrated.
- Do not drink alcohol.
- Take frequent breaks from the cold to let the body warm up.
- Increase your activity level, add insulation, add a heat source, or get out of the cold if shivering occurs.
- Be careful around cold water and always wear a personal flotation device (PFD).

What to Look For

Levels of Cold Stress

Cold Stress (Not Hypothermic)

- Shivering
- Normal mental status
- Able to care for self

Mild Hypothermia

- Vigorous shivering; complaining of the cold
- Decreased physical function
- Difficulty taking care of self

Moderate Hypothermia

- Weak and intermittent shivering or shivering that later stops
- Sometimes complaining of the cold
- Lack of coordination or speech; confused or unusual behaviour
- Impaired judgment
- Possible unresponsiveness

Severe Hypothermia

- Shivering has stopped
- Unresponsiveness; breathing has slowed down or stopped
- Body feels stiff

What to Do

Check

Hypothermia can slow a person's breathing, so you may need to spend longer than usual checking the person's ABCs. If the person is unresponsive and you suspect hypothermia, check for signs of breathing for 60 seconds.

Call

Call EMS/9-1-1 and get an AED if the person has moderate to severe hypothermia.

Care

When caring for hypothermia, handle the person very gently and keep him or her horizontal. You should only move the person if it is absolutely necessary. Take care to avoid jostling or bumping him or her. Remove wet clothing, but only in an area sheltered from the cold environment.

Cold Stress (Not Hypothermia)

1. Reduce heat loss (e.g., add dry clothing).
2. Give the person a high-calorie food or drink.
3. Increase heat production (e.g., have the person exercise).

Mild Hypothermia

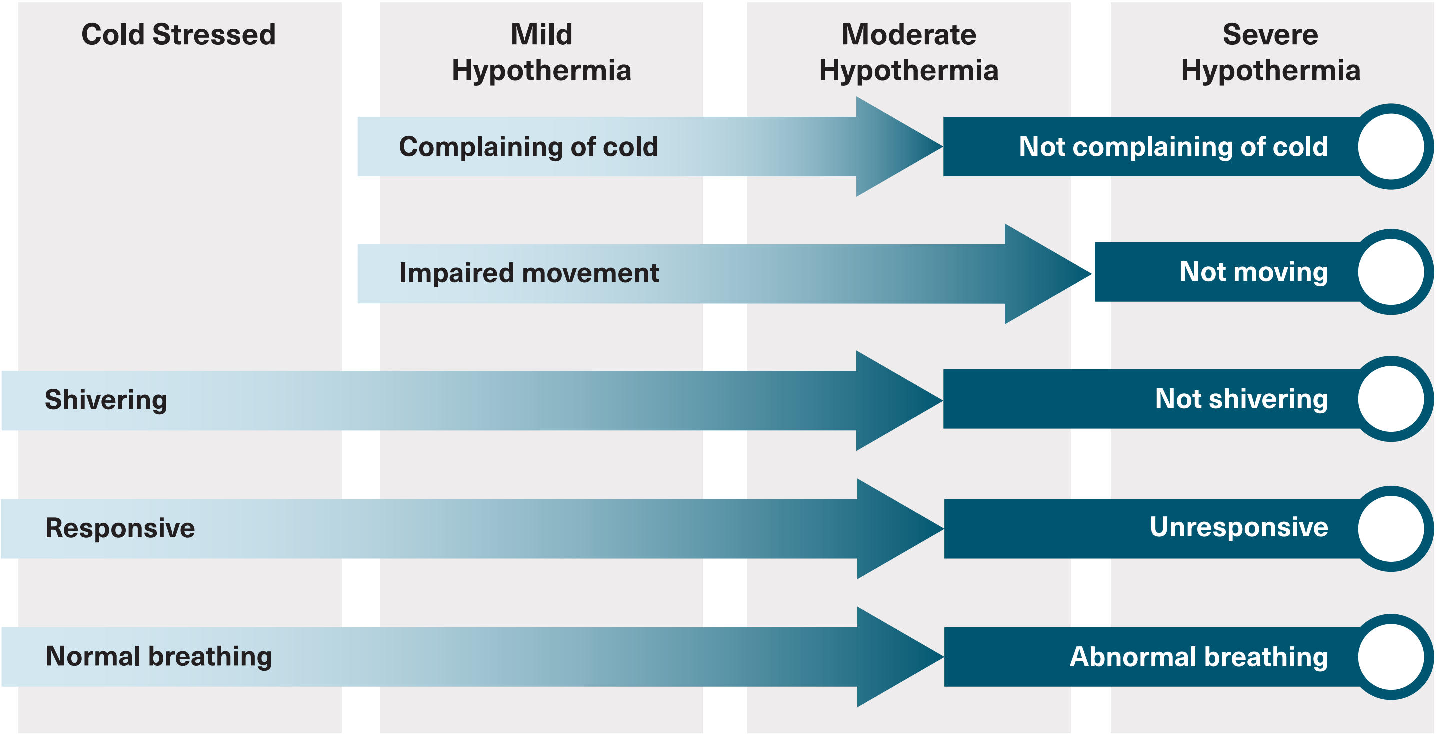
1. Handle the person gently and keep him or her horizontal (no standing or walking for at least 30 minutes).
2. Insulate the person or apply a vapour barrier.
3. Apply heat to the person's upper trunk.
4. Give the person a high-calorie food or drink.
5. Monitor the person until his or her symptoms improve (for at least 30 minutes).
6. Call EMS/9-1-1 if there is no improvement.

Moderate Hypothermia

1. Handle the person gently and keep him or her horizontal (no standing or walking).
2. Do not give the person a drink or food.
3. Insulate the person or apply a vapour barrier.
4. Apply heat to the person's upper trunk.
5. Call EMS/9-1-1.

Severe Hypothermia

1. If the person has no obvious vital signs, check for breathing for 60 seconds.
    - If the person IS breathing, follow the steps for moderate hypothermia.
    - If the person is NOT breathing, start CPR.
2. Call EMS/9-1-1.



The progression from cold stress (left) through mild, moderate, and severe hypothermia (right)

Applying a Hypothermia Wrap

Applying a hypothermia wrap is one way to minimize the heat lost by a person with hypothermia. It consists of a number of layers of insulation and heat-reflecting material.

Suggested Supplies for a Hypothermia Wrap:

- Tarp or plastic sheet for vapour barrier outside sleeping bag
- Insulated ground pad
- Hooded sleeping bag (or equivalent)
- Plastic or foil sheet (2 x 3 m) for vapour barrier placed inside sleeping bag
- Source of heat (e.g., chemical heating pads/blankets or warm water in a bottle or hydration bladder)

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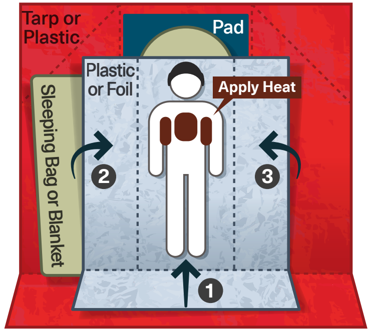

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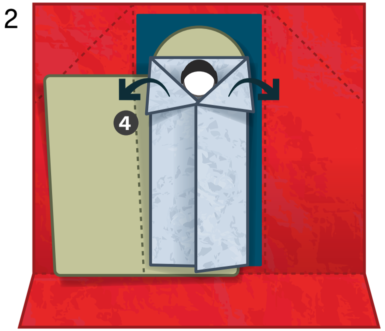

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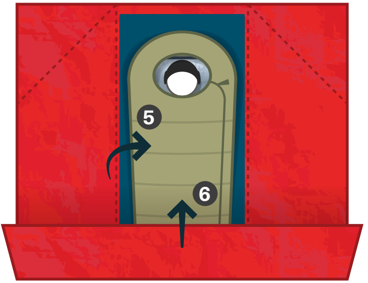

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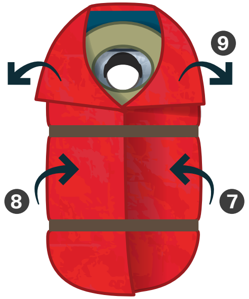


To apply a hypothermia wrap:

1. Place a vapour barrier and insulation pad (or pads) between the person and the ground.
2. Apply as much insulation as possible. Add extra clothing and wrap the person in blankets or sleeping bags.
3. Cover the person's head and neck with a toque, heavy hat, or hood.
4. Place a vapour barrier (plastic or foil blanket) outside the insulation wrap if the person is dry. If the person is still wet, place the vapour barrier inside the insulation wrap. If two vapour barriers are available, place one inside and one outside the insulation wrap.

!

If the person's clothing is very wet and shelter or transport is **less than 30** minutes away, wrap the person immediately.

If the person's clothing is very wet and shelter or transport is **more than 30** minutes away, protect the person from the environment, remove their wet clothing, and **then** wrap them.

Freezing of Skin to Metal Objects

A person's skin (especially the tongue and lips) can freeze to cold metal objects. This is especially a risk when skin is wet or moist. While this is a concern mainly in cold weather, skin can also freeze to metal objects in other situations (e.g., skin freezing to cold appliances such as freezers).

What to Do

Call

Call EMS/9-1-1 if you cannot safely remove the body part.

Care

1. Do not pull or tug the frozen body part.
2. Pour warm (not hot) water on the surface of the object or the skin that is stuck to the object.
3. As the skin begins to come free, gently help release the person from the metal object.
4. Treat any torn skin as an open wound.

Snow Blindness

Common Causes

Snow blindness occurs when a person's eyes are exposed to ultraviolet rays. It most commonly occurs when the sun's light is reflected from snow, ice, sand, or water into a person's eyes. Snow blindness can occur even on cloudy days.

Prevention

To help prevent snow blindness, wear sunglasses that block 100% of UV rays and prevent light from shining in from below, above, or the sides.

What to Look For

Signs and symptoms of snow blindness may include:

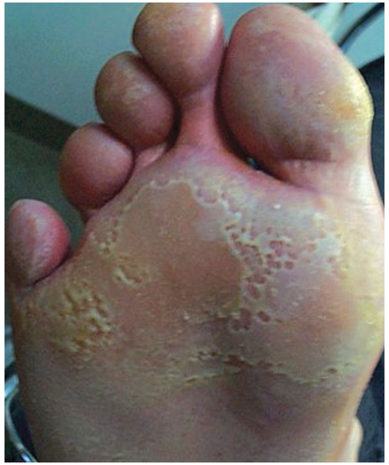
- Redness of the eyes
- Swelling of the tissue around the eyes
- Pain, itchiness, or a burning sensation in the eyes that may become intense
- Temporary colour changes in vision, or even vision loss

! The signs and symptoms of snow blindness may not appear for several hours following exposure to bright, snowy conditions.

What to Do

Care

1. Place the person in a darker environment, if possible, or cover his or her eyes.
2. Apply a cool, damp cloth to reduce pain and burning.
3. If the person's vision is affected, seek medical attention.



Trench Foot (Immersion Foot)

Trench (immersion) foot can happen when a person's lower limbs are exposed to water that is above freezing temperatures for more than 12 hours, but usually happens in water that is below 10° C (50° F). Trench foot typically occurs in construction workers and sailors who have survived shipwrecks in lifeboats or rafts with wet and constrictive clothing during adverse weather conditions. It is particularly likely if they are also surviving on a poor diet.

Prevention

To prevent trench foot, people can:

- Keep their feet clean and dry.
- Wear proper-fitting boots.
- Wear wool or synthetic socks.
- Sleep in dry socks or barefoot.
- Dry and massage their feet twice a day.

What to Look For

A person with trench foot may initially have:

- Swollen, cold, and waxy feet.
- Peeling skin.
- Reduced sensitivity to touch.
- A wooden feeling in their feet.
- Delayed capillary refill time (their nail beds stay white after being squeezed).

After the person's foot warms up, they might have:

- Warm, dry, red skin
- Blisters
- Pain
- Tingling or itching
- Increased sensitivity to cold

What to Do

Call

If a person's feet have redness, red streaks, blisters, or cracks that do not go away after basic foot care, advise them to contact their care provider.

Care

1. Get the person's foot warm, clean, and dry.
    - Handle the area gently and warm it slowly.
2. Elevate the injured foot or feet.
3. Continue to monitor the person and the affected area.

Recovery

If the person's skin is broken, advise them to watch for signs of infection.

Drowning

Drowning occurs when a person's airway is submerged in water, cutting off the oxygen supply to the body.

Drowning is a leading cause of death for children and babies. An average of 400 Canadians drown each year. Young children aged 1 to 4 and men aged 15 to 44 are at the greatest risk.

Prevention

The following tips will reduce the risk of drowning:

- Always wear a personal flotation device (PFD) when in a boat or other mode of marine transportation.
- Supervise children in, on, and around any body of water.
- Those who do not swim or are weak swimmers should wear a PFD when in, on, and around any body of water.
- Check water depth before swimming or diving.
- Have appropriate safety equipment available when in or on the water.
- Take swimming and water safety lessons.

Responsive Drowning Person

What to Look for

These common warning signs can indicate that someone is drowning:

- The person is vertical in the water, and is not using his or her legs to move forward or tread water.
- The person may have an expression of fear.
- The person's arms may be flailing up and down as he or she tries to rise out of the water to breathe, rather than trying to swim forward.
- The person's movements are uncontrolled.

What to Do

Call

Call for a lifeguard or other trained person (if one is nearby), or call EMS/9-1-1.

Care

To help rescue a person from the water:

1. **Talk –** Instruct the person on self-rescue.
2. **Throw –** Throw a rope or buoyant object to the person.
3. **Reach –** Reach out to the person with a rigid object like a ladder, paddle, or tree branch.

Any person rescued from cold water should be treated for hypothermia.

> **!** Unless you have received specific training in water rescue, never enter the water or approach a hole in the ice to attempt to help a person.

Unresponsive Drowning Person

What to Do

Call

Call EMS/9-1-1 and get an AED.

Care

1. If the person is not breathing, begin CPR.

13 Poisons

A poison is a substance that has a harmful effect within the body if it is inhaled, swallowed (ingested), absorbed, or injected. Poisons are immediately life-threatening if they affect breathing or circulation. Practically anything can be a poison if it is not meant to be taken into the body. Even some substances that are meant to be taken into the body, such as medications, can be poisonous if they are taken by the wrong person, or if the person takes too much. Combining certain substances can also result in poisoning.

Poisoning can happen anywhere, but most poisonings take place in the home. Children younger than 5 years, especially toddlers, are at the highest risk for poisoning. Children may be attracted to pretty liquids in bottles, sweet-smelling powders, berries on plants that look like they are edible, or medications or vitamins that look like candy. Additionally, very young children explore their world by touching and tasting things around them, so even substances that do not look or smell attractive are poisoning hazards among this age group. Older adults who have medical conditions that cause confusion (such as dementia) or who have impaired vision are also at a higher risk of unintentional poisoning.

When providing first aid for a poisoned person, use caution to avoid contact with the poison.

A poison centre can provide you with specific first aid instructions for a variety of types of poison, but remember that you should always call EMS/ 9-1-1 if the person has an altered level of responsiveness or is having difficulty breathing. Keep the national poison number (1-844-POISON-X) or local poison centre number by your telephone and save it as a contact in your mobile phone.

Types of Poisons

Swallowed Poison 	Enters the body through the mouth, lips, esophagus, or stomach. Drinking bleach is an example of swallowed poisoning.
Absorbed Poison 	Enters the body through the skin. Plants (such as poison ivy) and chemicals can cause absorbed poisoning.
Injected Poison 	Enters the body through bites or stings or as drugs injected with a needle.
Inhaled Poison 	Is breathed into the body. Breathing in carbon monoxide from a car's exhaust is an example of inhaled poisoning.

Household Poisons

Many everyday household items can be poisonous if they are used incorrectly. Common causes of unintentional poisonings at home include:

- Alcohol (found in many products, including hand sanitizer, mouthwash, perfume, cologne, aftershave, and vanilla extract)
- Medications (over-the-counter and prescription) and vitamins
- Cleaning products (detergent “pods” are especially attractive to children)
- Glues and paints (lead paint remains toxic even when it is applied, and children may put peeling paint into their mouths)
- Insect and weed killers
- Car products (e.g., antifreeze, windshield washer fluid)
- Plants (both houseplants and outdoor plants)
- Oils, lubricants, and polishes
- Tobacco , vape, and e-cigarette products
- “Button,” “watch,” or “coin” batteries (some places that they can be found include toys, watches, hearing aids, remote controls, musical greeting cards, or flameless candles)

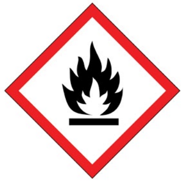
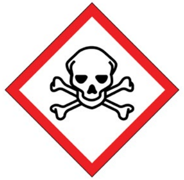
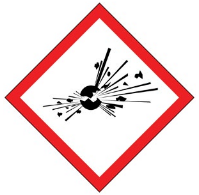
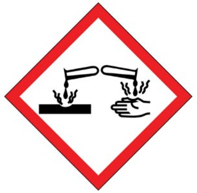
Identifying Hazardous Materials

The international hazard symbols on product labels make it easier to identify harmful materials.

If you must handle a product that is labelled with any of the international hazard symbols:

- Carefully read the warnings and follow the instructions.
- Wear protective equipment (such as eye goggles, a face mask, and disposable gloves).
- Ensure the product is properly sealed and stored after use.

The International Hazard Symbols

	**Flammable** These materials catch fire easily and burn quickly when exposed to any form of ignition (such as fire or heat).
	**Toxic** These materials can harm the respiratory (breathing) system, nervous system, and other systems if they are absorbed through the skin, inhaled, or ingested.
	**Explosive** These materials can explode when exposed to heat, flame, or pressure.
	**Corrosive** These materials can burn the skin and cause permanent blindness.

Prevention

Prevention at Home

The following tips will help reduce the risk of poisoning:

- Keep all medications, household cleaning products, poisonous plants, and other toxic substances well out of the reach of children. Use locked cupboards or child-resistant latches.
- Use child-resistant safety caps on medications and other potentially toxic products.
- Never call medicine "candy" to persuade a child to take it.
- Teach children to check with an adult before eating an unknown substance.
- Keep potentially poisonous products in their original containers with their original labels.
- Ensure that prescription medicine is taken only by the person whose name is on the label.
- Carefully dispose of expired medications through your local hazardous waste process.
- Be aware that many cleaning products and aerosol sprays have toxic fumes. Use potentially poisonous chemicals in a well-ventilated area.
- Wear proper protective clothing any time you are working with or around a poisonous substance.
- Run gas and other combustion engines only in open, well-ventilated areas.
- Learn about poisonous plants in your area and before going into a new environment.

Prevention in the Workplace

The following tips will reduce the risk of poisoning in the workplace:

- Clearly label all toxic substances and never use a product that is not clearly identified.
- Have a detailed SDS (Safety Data Sheet) available for every hazardous substance in the workplace.
- Ensure that workers who might be exposed to hazardous materials receive the proper training in safety measures and emergency procedures.
- Check all warning labels, tags, and posters in the workplace and follow their instructions carefully.
- Read labels and the SDS to find out the risks of each hazardous material, the safety measures that must be taken to prevent poisoning, and the first aid required if poisoning occurs.

General Care for Poisoning

Your check of the scene and the person might give clues that point to poisoning as the cause of the person's illness. For example, you may note an open or spilled container, an unusual odour, burns around the person's mouth, a strange odour on the person's breath, or other people in the area who are also ill.

If you think that a person has been poisoned, try to find out the following key points so that you and others can give the most appropriate care:

- The type of poison
- The quantity taken
- When it was taken

Calling EMS/9-1-1 or a poison centre is the most important thing you can do if a poisoning of any type is suspected. Other general first aid care tips for poisoning include the following:

- Limit further exposure by moving either the person or the source of the poison.
- If the poison's container is found nearby, give the information from the label to the poison centre or EMS/9-1-1 dispatcher.
- Do not give the person anything to eat or drink unless an EMS dispatcher or poison centre staff member tells you to do so.
- If you do not know what the poison was and the person vomits, save a sample to give to EMS personnel.

Swallowed Poisons

What to Look For

The following may indicate that a poisonous substance has been swallowed:

- An open container of poison nearby
- Burns around the mouth
- Increased production of saliva or saliva that is an abnormal colour
- Abdominal cramps, vomiting, or diarrhea
- Seizures
- Dizziness or drowsiness
- Unresponsiveness
- A burning sensation in the mouth, throat, or stomach

What to Do

Call

If the person is responsive and alert and his or her ABCs are unaffected, call the local poison centre. Call EMS/9-1-1 and get an AED if the person has an altered level of responsiveness or has difficulty breathing.

Care

1. If the person is not breathing, start CPR. If you suspect that there is poison in or around the person's mouth or on their face, do compression-only CPR.
2. Check the packaging of the poison, if possible, so that you know what it is.
3. Induce vomiting only if told to do so by the EMS dispatcher or the poison centre.
4. If the person needs to go to the hospital, bring a sample of the poison (or its original container).

Inhaled Poisons

What to Look For

The following may indicate that a poisonous substance has been inhaled:

- Breathing difficulties
- Irritated eyes, nose, or throat
- Dizziness
- Vomiting
- Seizures
- Bluish colour around the mouth
- Unresponsiveness
- An unusual smell in the air

What to Do

Call

If the person is responsive and alert and his or her ABCs are unaffected, call the local poison centre. Call EMS/9-1-1 and get an AED if the person has an altered level of responsiveness or has difficulty breathing.

Care

1. If the person is not breathing, start CPR. If you suspect that there is poison in or around the person's mouth or on their face, do compression-only CPR.
2. Get the person into fresh air but do not enter into a hazardous atmosphere in order to do so.

Inhaled poisons can affect everyone in an area. Stay out of the area if you suspect that the poison may still be in the air.

Carbon Monoxide Poisoning

Carbon monoxide (CO) is a gas that has no smell, colour, or taste. CO poisoning is often called a "silent killer" because it is not detectable to any of the body's senses. CO bonds to red blood cells 200 times better than oxygen, preventing oxygen from attaching and therefore starving the body of oxygen.

It releases when fuel is burned in small engines, lanterns, fireplaces, stoves, grills, gas ranges, furnaces, cars, and trucks. When equipment that burns these fuels is properly ventilated, CO poisoning is not a problem. But if the equipment or ventilation system is faulty, or if outdoor equipment is used in an enclosed area, toxic levels of CO can build up quickly, creating the risk of CO poisoning. Concentrated CO is poisonous and life-threatening to those who inhale it.

Prevention

The following tips help prevent carbon monoxide (CO) poisoning:

- Ensure that a certified battery-operated or battery back-up CO detector is installed in the home or workplace where the alarm will be easily heard.
- Check the CO detector's batteries twice a year, ideally once in the fall and once in the spring.
- Have all fuel-based appliances and equipment installed and repaired by a qualified technician.
- Have all fuel-based appliances and equipment serviced annually by a qualified professional.
- Use fuel-based appliances and materials as intended (e.g., do not use generators or portable flameless chemical heaters indoors, do not use a gas stove or oven for heating, do not burn charcoal indoors).
- Ensure that chimneys are inspected and cleaned annually by a professional.
- Never run a car or truck inside an attached garage. For detached garages, always leave the garage door open when running a car or truck inside.

What to Look For

The signs and symptoms of acute carbon monoxide (CO) poisoning are commonly mistaken for a stomach virus, the flu, or food poisoning. Signs and symptoms include the following:

- Headache
- Dizziness or light-headedness
- Confusion
- Impaired hearing and vision
- Weakness or fatigue
- Muscle cramps
- Nausea and vomiting
- Chest pain
- Altered level of responsiveness

What to Do

Care

1. Treat the person as you would for any other type of inhaled poison.

Absorbed Poisons

What to Look For

The following signs and symptoms can indicate that a poisonous substance has been absorbed:

- Rash or hives (raised, itchy areas of skin)
- Burning or itching skin
- Swelling
- Blisters
- Burns
- Unresponsiveness

What to Do

Call

If the person is responsive and alert, and the person's ABCs are unaffected, call the local poison centre. Call EMS/9-1-1 and get an AED if the person has an altered level of responsiveness or has difficulty breathing.

Care

1. If the person is not breathing, start CPR.
2. If the poison is a dry powder, brush it off the person's skin. Be careful to avoid contaminating yourself.
3. Remove any clothing or items covered in the poison.
4. Flush the skin with running water for at least 15 minutes. To prevent any further injury, make sure the water flushes away from any unaffected areas of the body.

Rash-Causing Plants

Some plants produce chemicals that can cause absorbed poisoning on contact. These plants vary in appearance depending on the location, species of the plant, and time of year. As prevention is the best strategy, it is a good idea to become familiar with the appearance of rash-causing plants in your area.

Prevention

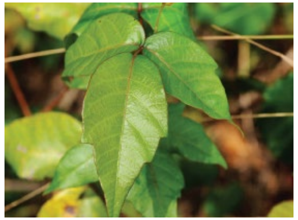
When there is the potential for exposure to rash-causing plants, follow these guidelines:

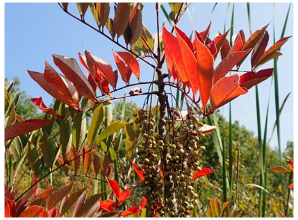
- Wear a long-sleeved shirt, long pants, and closed-toed shoes.
- Apply a pre-contact barrier cream or lotion before going outside.
- Wash skin with a specialized skin cleanser designed to remove plant oils or a degreasing soap (such as dishwashing liquid) and plenty of water immediately after returning indoors.
- Wash tools, work gloves, and clothing that may have contacted rash-causing plants, as oils can remain on these items and transfer to the skin the next time they are used.

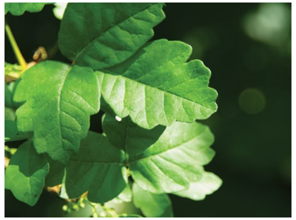
If you suspect that your skin has come into contact with a rash-causing plant, wash the entire area with a degreasing soap immediately.

Poison Ivy, Sumac, and Oak

Plants such as poison ivy, poison sumac, and poison oak are covered with an oil called urushiol, which causes a skin reaction in most people.







What to Look For

Contact with urushiol can cause the following signs and symptoms:

- Itchy skin
- Reddening of the skin
- Bumps
- Blisters

The rash can range from irritating to unbearable, depending on the person's sensitivity, the amount of skin exposed, and the rash's location.

! Do not burn plants containing urushiol. The oil is carried in the smoke, and inhalation can cause swelling of the throat and irritation of the lungs.

What to Do

Call

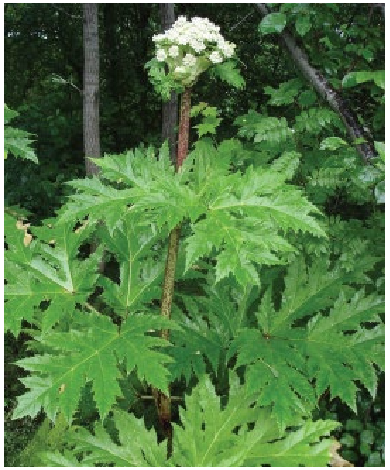
Call EMS/9-1-1 only if the person experiences a severe allergic reaction or is having trouble breathing.

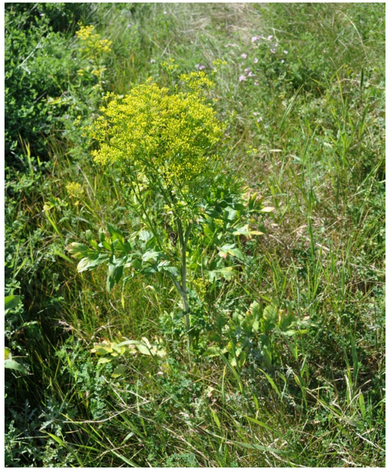
Care

1. Encourage the person to apply a cream or ointment designed to reduce itching and blistering (e.g., calamine).
2. Suggest that the person take an oral antihistamine to help relieve itching.
3. If the rash is severe or on a sensitive part of the body (such as the face or groin), the person should see a healthcare provider.

Giant Hogweed and Wild Parsnip

The sap of giant hogweed and wild parsnip contains toxic photosensitizing compounds called furanocoumarins. Contact with the plant transfers these compounds to the skin. While they do not have an immediately visible effect, they cause the skin to react when exposed to the sun's UV radiation to produce severe inflammation, intense burning, and weeping blisters. If any of these plants are found, their location should be reported to the local environmental or municipal authorities.





What to Look For

If the person's skin has come into contact with the sap of giant hogweed or wild parsnip, and is then exposed to the sun's UV radiation, the following signs and symptoms may occur:

24 hours after exposure:

- Swelling of the skin
- Reddening of the skin

48 hours after exposure:

- Painful blistering
- Purplish scarring of the skin

What to Do

Call

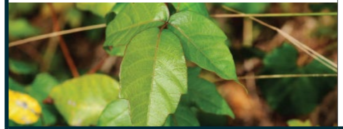
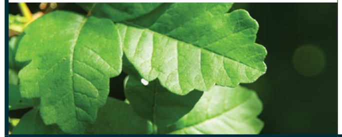
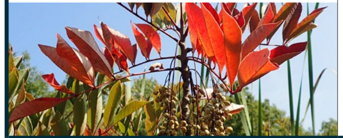
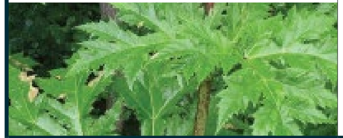
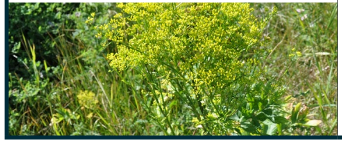
Call EMS/9-1-1 if the person is having trouble breathing, or if the sap is on the person's eyes, face, or groin.

Care

1. Protect the area from sunlight.
2. If sap gets into the eyes, rinse them thoroughly with water for at least 15 minutes, or until EMS personnel arrive.
3. Encourage the person to seek medical attention.

If a reaction occurs, the affected area may be sensitive to sunlight for months or even years. Protect the area by keeping it covered, wearing sunglasses, and applying sunscreen.

Rash-Causing Plants

Poison Ivy 	Found in all the provinces except Newfoundland and Labrador, but has not been reported in any of the territories
Poison Oak 	Found in British Columbia
Poison Sumac 	Found in Southern Ontario and Quebec
Giant Hogweed 	Found in Nova Scotia, New Brunswick, Quebec, Ontario, and British Columbia
Wild Parsnip 	Found in all provinces and territories except for Nunavut

Injected Poisons

What to Look For

Needles found nearby are a common sign that an injected poisoning has occurred. The following are other signs and symptoms that indicate a poisonous substance has been injected:

- One or more puncture wounds on the person's skin
- Problems breathing
- Redness and swelling at the entry point on the person's skin

What to Do

Call

If the person is responsive and alert, and the person's ABCs are unaffected, call the local poison centre. Call EMS/9-1-1 and get an AED if the person has an altered level of responsiveness or has difficulty breathing.

Care

1. Clean the puncture site with clean running water.
2. Keep the person as still as possible.

Poisoning Caused by Alcohol or Drugs

Drug Poisoning

Drugs (whether over-the-counter, prescription, or illegal) are a frequent cause of death by poisoning. Drug poisonings may be accidental or intentional. Signs and symptoms will vary depending on the drug.

Stimulants

- Stimulants affect the brain and nerves to speed up physical and mental activity.
- Many stimulants are swallowed as pills, but some can be absorbed or inhaled.

Hallucinogens

- Hallucinogens cause changes in mood, sensation, thought, emotion, and self-awareness.
- They can cause intense fear, panic, paranoid delusions, vivid hallucinations, deep depression, tension, and anxiety.

Depressants

- Depressants send signals to the brain and nerves that slow down physical and mental activity.
- They cause drowsiness and impair coordination and judgment.
- Alcohol is the most widely used and abused depressant in Canada.

Designer Drugs

- Designer drugs don’t fit into any of the categories mentioned above.
- They are often chemically altered versions of medical drugs, such as narcotics and amphetamines.
- Their effects can be unpredictable and dangerous.
- Ecstasy, GHB, ketamine, and LSD are examples of designer drugs.

What to Look For

The signs and symptoms of drug poisoning will vary depending on the drug but often include the following:

- Moist or flushed skin
- Sweating
- Chills or fever
- Nausea or vomiting
- Vomiting blood or passing blood
- Changes in breathing or difficulty breathing
- Racing or pounding heart
- Continuous pain or pressure in the chest or abdomen
- Seizures
- Severe headache
- Slurred speech
- Changes in level of responsiveness
- Changes in behaviour (e.g., aggression or fear)

What to Do

Call

Call EMS/9-1-1 and get an AED if you suspect a drug poisoning or if the person is having seizures, has difficulty breathing, is unresponsive, or has a change in behaviour.

Care

1. Provide care based on the signs and symptoms the person is experiencing.

Opioid Poisoning

The term “opioids” refers to a group of drugs that bond with opioid receptors in the brain, slowing down the central nervous system. They release signals that block feelings of pain and can boost feelings of pleasure.

Opioids include medical drugs, such as morphine and codeine, and non-medical drugs, such as heroin and carfentanyl. “Opiates” is a word that refers to drugs that are made from the opium poppy, such as morphine and heroin. “Synthetic drugs” is a term that describes drugs that can be made in a lab, such as fentanyl.

Many prescription opioids are used to block pain signals between the brain and the body and are prescribed to treat pain from things like surgery and cancer. Opioids can also be used to treat coughs and chronic pain.

Some common opioid pain relievers include:

- Acetaminophen with codeine (Tylenol 3)
- Oxycodone
- Hydromorphone (such as Dilaudid)
- Morphine
- Codeine
- Fentanyl

Even when these medications are taken as prescribed, they can produce side effects that patients and prescribers need to be aware of.

Opioids are depressants. They react with receptors in the brain and “slow down” the central nervous system.

The central nervous system controls breathing and heart rate. Amounts of opioids that are higher than prescribed can interfere with the brain’s signals to the body. When this happens, it is called an opioid poisoning.

Opioid poisonings can cause:

- Changes in the person’s level of responsiveness
- Slowed or stopped breathing
- Death

Opioid poisoning can happen to anyone. It is a medical emergency, and you must respond immediately to save a life.

Prevention

When they are taken as prescribed, opioids are very powerful and effective medications. However, there are many factors which can increase the risk of an accidental opioid poisoning.

A person may have a higher risk of an opioid poisoning if they:

- Take prescription opioids more often or at higher doses than recommended
- Take an opioid that their body is not used to, or switch to a stronger one
- Take higher doses than they are used to
- Take opioids after not having taken them for some time
- Take opioids with alcohol or other substances
- Use drugs of unknown purity or strength
- Have other health conditions (such as breathing problems)

If you are concerned about someone you know who is using opioids, you can suggest that they:

- Never use alone
- Know hotline resources or use-alone apps if they are on their own
- Use one drug at a time (mixing opioids with alcohol or other drugs increases the risk of poisoning)
- Start low and go slow
- Have an emergency response plan
- Have drugs checked for contaminants (like fentanyl)
- Have a naloxone kit with them

Other things you can do to prevent opioid poisoning emergencies include:

- Use medications as prescribed
- Do not share your medication
- Return unused opioids to your pharmacy
- Store medications safely away from children and pets

Naloxone

Naloxone is a drug that temporarily reverses or blocks the effects of opioid poisoning on the central nervous system. Naloxone can restore a person's breathing within 2 to 5 minutes. It should be given to any person who is showing signs of opioid poisoning.

You will not hurt a person by giving them naloxone, even if they are not actually experiencing an opioid poisoning. Naloxone only works if a person has opioids in their body. If there are no opioids, the naloxone will have no effect, and it can easily save someone's life.

The effects of naloxone only last for 20 to 90 minutes. Because opioids last much longer than that in the body, the person may need more than one dose of naloxone. Naloxone does not reverse the effects of any other substances that the person may have taken, such as alcohol.

Naloxone is not a substitute for professional medical care. Its effect is temporary. Naloxone does not remove opioids from a person's body; it just blocks their effects while the body breaks them down. If there are still opioids in a person's system when the naloxone wears off, the person could quickly become worse again. You must call EMS/9-1-1 as soon as possible if you suspect that a person is experiencing an opioid poisoning.

How to Access Naloxone

Naloxone comes in two different forms:

- A nasal spray (intranasal device)
- An intramuscular injection

Naloxone is available without a prescription and can be picked up at most pharmacies or local health authorities. Take-home naloxone kits are available free of charge in most provinces and territories.

Naloxone Kit

Naloxone kits usually contain the tools you need to give naloxone, CPR, and rescue breaths to a person who is experiencing an opioid poisoning emergency.

A kit usually contains:

- 2 or 3 doses of naloxone and the devices necessary to administer it
- 1 pair of disposable gloves
- 1 disposable CPR face shield
- 1 insert that briefly describes the steps to respond

Depending on the type of kit, the naloxone doses will include different supplies.

Intranasal kits include:

- 2 naloxone spray devices (each containing a single dose)

Intramuscular kits include:

- Single-dose ampules of naloxone and plastic ampule breakers OR single- or multi-dose vials of naloxone
- Syringes with needles
- Wrapped alcohol swabs

How to Care for a Naloxone Kit

If you have a naloxone kit, you should keep it in good condition by:

- Following the directions on the packaging about how to store it
- Keeping it at room temperature
- Checking the expiry date on the packaging

If naloxone has expired or been exposed to extreme temperatures, you are still able to use it if you need to respond to an emergency. It will likely still work, but it may not be as effective. You should replace the kit as soon as possible.

What to Look For

The signs and symptoms of an opioid poisoning include:

- Abnormal, slow, or no breathing
- A change in the person's level of responsiveness
- A change in skin colour
- Small or pinpoint pupils
- Seizures
- Clammy skin
- Clues in the environment, such as needles or pill bottles

What to Do

Call

Call EMS/9-1-1 and get an AED and a first aid kit any time that you suspect a person is experiencing an opioid poisoning.

Care

You can give naloxone to any person who might need it, even if they are not able to ask for your help in administering it. Someone experiencing an opioid poisoning needs your help; they cannot administer naloxone themselves.

Remember, you cannot hurt someone by giving them naloxone, even if they are not suffering from opioid poisoning. But you might just be saving a life.

If the person is **RESPONSIVE** and their **BREATHING IS NORMAL**, stay with them and monitor them until emergency personnel arrive.

If the person is **UNRESPONSIVE** and their **BREATHING IS ABNORMAL**:

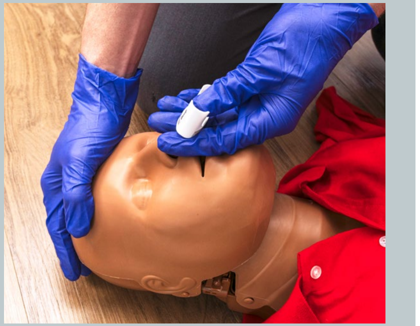
1. Start CPR and administer naloxone.
2. Continue CPR until emergency personnel arrive, or they begin breathing.

If the person is **UNRESPONSIVE** and their **BREATHING IS NORMAL**:

1. Administer naloxone.
2. Monitor the person closely until emergency personnel arrive.
3. Recheck them often since naloxone can cause rapid changes in their condition.

! It is recommended that you state clearly to the person that you are preparing to administer naloxone. This gives the person the opportunity to say no if they become responsive.

Administering Naloxone Nasal Spray (Intranasal Device)



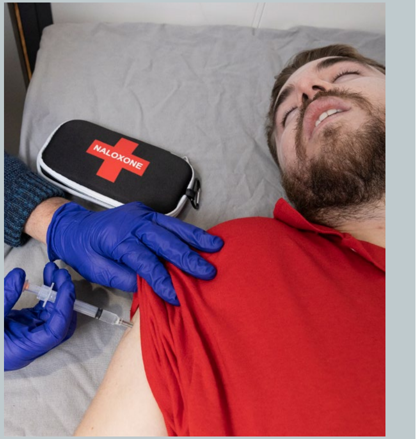
1. Put on gloves.
2. Remove the nasal spray device from the packaging.
   - Do not test the device, as each device only contains one dose.
3. Place your thumb on the plunger and hold the nasal spray tip between your middle and index fingers.
4. Gently tilt the person's head back slightly and support it in this position.
5. Insert the tip of the device into one of the person's nostrils until your fingers touch the bottom of the person's nose.
6. Administer the entire dose of medication by pressing firmly on the plunger.
7. Remove the device from the person's nostril immediately.
8. Give a second dose with a new device if the person's condition does not improve within 2 to 5 minutes.
   - You can give the person a second dose in either of their nostrils.

Administering Intramuscular Naloxone (Injection Into a Muscle)

1. Put on gloves.
2. Prepare the injection site.
   - The injection will go into the person's upper outer thigh or their outer shoulder.
   - If possible, move clothing from the injection site and clean it with an alcohol swab.
3. Prepare the intramuscular naloxone.
   - If the kit has ampules:
     a. Hold the ampule (small glass capsule) upright and gently swirl it or tap the bottom to remove any liquid trapped in the neck.
     b. Break the ampule open using the ampule breaker.
   - If the kit has vials:
     a. Remove the plastic cap.
     b. Clean the rubber stopper with an alcohol pad.
4. Fill the syringe.
   - If the kit has ampules:
     a. Remove the cap from the needle.
     b. Carefully insert it into the open ampule.
     c. Steadily pull up on the plunger to draw all the naloxone from the ampule into the syringe.

- If the kit has vials:
  - a. Remove the cap from the needle.
  - b. Draw some air into the syringe by pulling out the plunger.
  - c. Stick the needle through the rubber stopper, straight into the vial, and push the plunger down to expel the air.
  - d. Draw the liquid from the vial.
- Get rid of any air bubbles.
  - a. Hold the syringe upright.
  - b. Tap the barrel of the syringe to move the bubbles to the top.
  - c. Slowly push the plunger until you can see a small drop of fluid at the tip of the needle.

5. Administer the naloxone.
   - Insert the needle at a 90-degree angle to the skin.
   - Inject all of the naloxone.
   - For a retractable needle, press until you hear a click.
6. After the injection:
   - Remove the needle from the skin.
   - Give a second dose, with a new syringe and needle, if the person's condition does not improve within 2 to 5 minutes.



Continual Care

1. Give the person more naloxone if it is required.
2. If the person's breathing is normal, roll them into the recovery position while you wait for emergency personnel to arrive.
3. If the person becomes responsive, reassure them that emergency personnel are on the way, and explain what has happened.
4. The person may be agitated when they wake up, so be prepared to move away if needed. They may vomit or be confused.

The Good Samaritan Drug Overdose Act

The Good Samaritan Overdose Act is a federal act that gives some legal protection to anyone who experiences or witnesses an opioid poisoning. It is meant to reduce the fear of police responding and to encourage people to call 9-1-1 or their local emergency number. The Good Samaritan Overdose Act can protect a person from drug possession charges.

Recovery

Encourage the person to seek ongoing professional care. The person can also connect with resources in their area as part of their recovery. These resources might include their care provider, a community group, their loved ones, or other social, cultural, or faith support networks.

Alcohol Poisoning

Alcohol is a depressant that affects the central nervous system. It impairs judgment, slows down reflexes, and makes driving unsafe. Very high levels of alcohol in the bloodstream can affect the brain's ability to control the body's breathing, heart rate, and temperature, which can lead to death. Alcohol poisoning occurs when large quantities of alcohol are consumed in a short period of time, resulting in toxic levels of alcohol in the body.

There are many factors that can contribute to an unsafe blood alcohol level:

- Speed of drinking
- Full or empty stomach
- Type of alcohol
- The person's weight and sex

What to Look For

The signs and symptoms of alcohol poisoning include the following:

- Confusion
- Vomiting
- Seizures
- Slow or irregular breathing
- Low body temperature (hypothermia)
- Unresponsiveness
- Skin that is a different colour than usual

What to Do

Call

Call EMS/9-1-1 and get an AED.

Care

1. Roll the person into the recovery position.
2. Carefully monitor the person until EMS personnel arrive, as his or her condition can deteriorate rapidly.

Bites and Stings

Bites and stings can range in severity from mildly irritating to life-threatening. When a person is bitten or stung, proper first aid care can help to limit complications and speed healing, and it may even be life-saving.

Animal Bites

Any animal that has teeth, whether domesticated (e.g., pets or livestock) or wild, can be the source of a bite wound. If the person does not know the animal, rabies may be a concern. Most animal bites carry a high risk of infection, so they should be monitored closely in the hours and days after the incident.

What to Do

Call

Call EMS/9-1-1 if bleeding is life-threatening. Call your local animal control department if the animal is wild or a stray.

Care

1. Try to get the person safely away from the animal without putting yourself in danger.
2. Do not try to capture the animal.
3. If the wound is bleeding heavily, provide care for external bleeding.
4. If the wound is minor:
    - Wash the wound thoroughly with clean water, ideally by running it under a tap, as the pressure from the running water lets it penetrate more deeply into the wound.
    - Control any bleeding.
    - Cover the wound with a dressing or bandage.
5. Seek medical attention if the animal is wild, stray, or unknown to you, or if you suspect the animal might have rabies.
6. Watch for signs and symptoms of infection and ensure that the person continues to monitor the wound over the next several days.

!

Human bites: If the person was bitten by another person, treat the wound that results the same way as any other open wound. Human bites often cause deep puncture wounds and have a high risk of infection: clean the wound carefully and monitor the injury for signs of infection.

Rabies

Rabies is a serious infection that attacks the brain and spinal cord. It is fatal if it is not treated. The virus that causes rabies is spread when an animal that has the disease bites another animal or a person. Wild animals (such as foxes, skunks, bats, and raccoons) can carry rabies, as can pets and livestock that have not been vaccinated against it. Only mammals can be infected with rabies.

Animals with rabies may act strangely. For example, an animal that is usually active at night may appear in the daytime, or a normally shy wild animal might not run away when people approach. Rabid animals may drool, appear to be partially paralyzed, or be aggressive or strangely quiet. Call EMS/9-1-1 if a person is bitten by an animal that you suspect might have rabies. If possible, try to remember details about the animal's behaviour and appearance, and where you last saw it. When you call EMS/9-1-1, the dispatcher will direct the proper authorities (e.g., animal control) to the scene.

A person who is bitten by an animal that might have rabies must get medical attention immediately. Treatment for rabies includes a series of injections to build up immunity that will help fight the disease.

Insect Stings

Most of the time, insect stings are merely uncomfortable. However, allergic reactions and anaphylaxis are always a concern. Some insects, such as bees, leave their stingers embedded in the person's skin. Others, such as wasps, can sting multiple times, but leave no stinger behind.

Prevention

To reduce the risk of insect stings:

- Wear a long-sleeved shirt, long pants, and closed-toe shoes.
- Don't wear perfume, cologne, or other products with strong scents.
- Remove or cover items that will attract insects, such as garbage or food.

What to Look For

The following can indicate an insect sting, especially if you see insects nearby:

- Quick, sharp pain at the site of the sting
- Pain, redness, or swelling at the site of the sting
- A stinger embedded in the skin

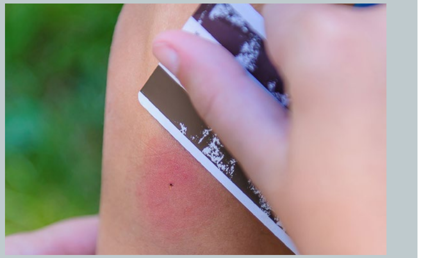
What to Do

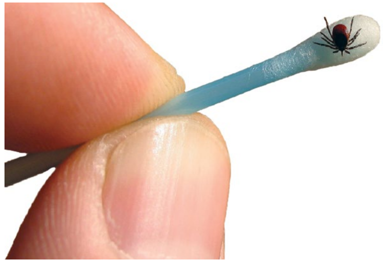
Call

Call EMS/9-1-1 and get an AED if there are any signs of a severe allergic reaction or if the person has been stung on their mouth or throat.

Care

1. If the stinger is still in the person's skin, remove it by scraping it away from the skin. Use a plastic card (such as a debit card) to do this.
2. Wash the area with clean water.
3. Cover the site with an adhesive bandage.
4. Apply ice or a cold pack to help control swelling. Put a thin cloth between the cold source and the person's skin to avoid freezing the skin.
5. Continue to watch for signs of infection, an allergic reaction, or anaphylaxis.





Tick Bites

Ticks are found in wooded, bushy areas, in tall grass, and in leaf litter on the ground. They can attach themselves to any warm-blooded animal that they come into direct contact with, including people. When ticks attach themselves to the skin, they can spread pathogens from their mouths into the person's body. These pathogens can cause serious illnesses, such as Lyme disease. Promptly remove any ticks that you find before they become swollen with blood. Ticks are most active from April to September.

Prevention

Tips to help prevent tick bites include the following:

- Avoid wooded areas and areas with high grass and leaf litter.
- Walk in the centre of hiking trails.
- Limit the amount of exposed skin. Wear long-sleeved shirts and long pants. Tuck your shirt into your pants and your pant legs into your socks or boots.
- Use insect repellents with 10 to 30% DEET on skin and clothing. A parent, guardian, or caregiver should apply repellents to children, carefully avoiding the eyes, mouth, and hands.
- Check gear and pets for ticks when coming in from outside.
- Immediately after being outdoors, do a head-to-toe check for ticks using a hand-held or full-length mirror. Check the scalp, under the arms, in and around the ears, inside the navel, around the waist, behind the knees, and between the legs. If you are outdoors for an extended period of time, check several times throughout the day. Caregivers and parents or guardians should check children for ticks.
- Put outdoor clothing in a tumble dryer on high heat for 1 hour to kill any ticks that might be attached.
- When walking with children in a tick-infested area, prevent ticks from entering their clothing by using a rubber band or tape to seal the area where children's pants and socks meet.

Using Insect Repellents to Prevent Tick Bites

Consider using an insect repellent if you will be in a grassy or wooded area for a long period of time, or if you know that the tick population in the area is high. Use repellents sparingly, as one application will last 4 to 8 hours and heavier or more frequent applications do not increase effectiveness.

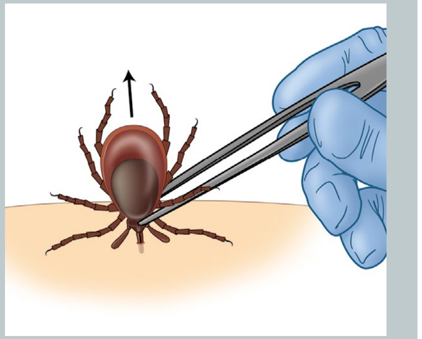
What to Do

Care

If the tick hasn't started to dig into the flesh, remove it by brushing it off the skin.

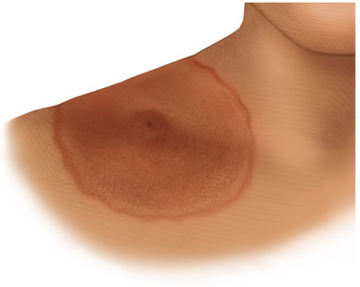
If the tick has begun to bite:

1. Use tweezers to grasp the tick by the head as close to the person's skin as possible.
2. Pull upward slowly and steadily without twisting until the tick releases its hold. If you cannot remove the tick or if its mouthparts stay in the skin, the person should seek medical attention.



3. If the tick is removed, wash the area with clean tap water. The pressure of the running water lets it penetrate more deeply into the wound.
4. If possible, save the tick in a resealable bag and record the date of the bite.
5. Advise the person to monitor the bite for several days for signs and symptoms of infection. If the area becomes infected (i.e., it becomes red, warm, or painful), or the person develops a fever, he or she should seek medical attention.

! Ticks can be infected with more than one type of bacteria that can cause human illness. Signs can appear weeks to months after a bite. If a person feels unwell after a tick bite, he or she should seek medical attention.



Lyme Disease

Lyme disease is caused by bacteria that are transmitted to humans through bites from infected ticks. If Lyme disease is not treated, it can become a chronic condition with serious symptoms such as cognitive dysfunction, joint and muscle pain, and neurological disorders.

What to Look For

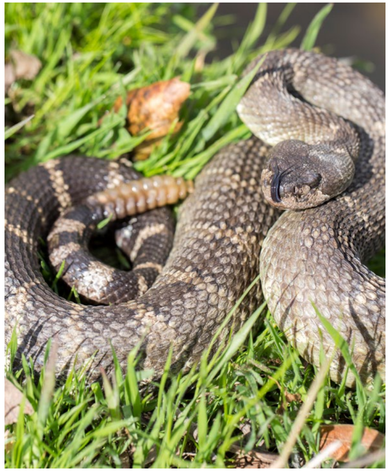
The most distinctive sign of Lyme disease is a small red rash centred on the location of the bite in the shape of a bullseye (a red dot on a paler circle with an outer red ring). These rashes are typically 13 to 18 cm (5 to 7 in.) across.

Other signs and symptoms of Lyme disease include:

- Fatigue
- Headache
- Fever or chills
- Swollen lymph nodes
- Numbness or tingling
- Muscle spasms or weakness
- Joint and muscle pain (similar in feeling to the flu)

What to Do

Seek medical attention as soon as possible. If possible, save the tick responsible for the bite in a resealable bag or empty pill bottle, and bring it to the medical appointment. It may help the doctor diagnose the illness.



Snakebites

In the wild, snakes like to occupy rock outcrops, swamps, undergrowth, and abandoned human structures. When disturbed, some snakes can inject venom as they bite.

The vast majority of Canada's snakes are non-venomous, but there are three venomous snakes currently native to Canada. All three are rattlesnakes:

1. Northern Pacific Rattlesnake
2. Massasauga Rattlesnake
3. Prairie Rattlesnake

Other venomous snakes in North America include copperheads, cottonmouths (water moccasins), and coral snakes. Most deaths from venomous snakebites occur because:

- Too much time passed before the person received medical care.
- The person had an allergic reaction to the venom.
- The snake bite compounded an existing health condition in the person.

Prevention

The following steps will help prevent snakebites:

- Do not aggravate a snake.
- Wear proper footwear and watch where you put your feet when hiking.

> **!** If you hear a rattlesnake, remain still until the snake is located, then back away slowly: avoid stomping or jumping as this may startle the snake.

A Snake's Striking Range

A snake's striking range is about two-thirds of its length forward and one-third upward. (In water, snakes have a shorter striking range.) If you are within striking distance, slowly back out of range.

What to Look For

Signs and symptoms of a possibly venomous snakebite include:

- A pair of puncture wounds in the skin
- Localized redness of the skin
- Pain and swelling in the area of the bite

What to Do

Call

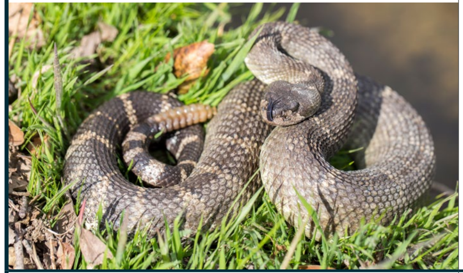
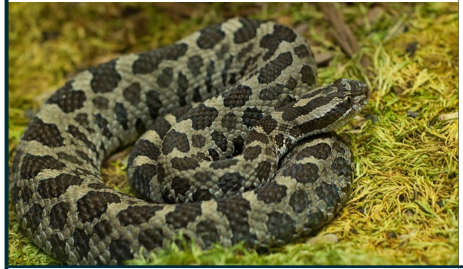
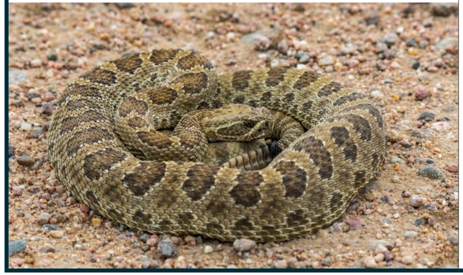
Call EMS/9-1-1 and get an AED. If you are not sure whether the snakebite was caused by a venomous snake, call EMS/9-1-1 anyway. Do not wait for life-threatening signs and symptoms of poisoning to appear.

Care

Before providing care, ensure that the snake is no longer present. If you see the snake, remember what it looks like so that you can describe it to EMS personnel. This information will help them provide the most appropriate treatment. Never attempt to capture or handle a potentially venomous snake.

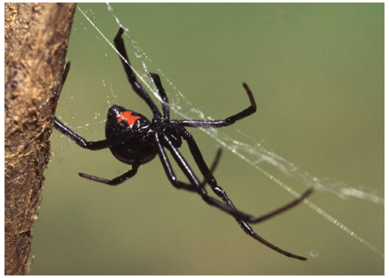
1. Keep the injured site still and level with the heart, if possible.
2. If the bite is on a limb, remove any jewellery or tight clothing from the limb and watch for swelling.
3. Wash the wound with water.
4. Cover the bite with a clean, dry dressing.

Venomous Snakes in Canada

Northern Pacific Rattlesnake 	Found in British Columbia
Massasauga Rattlesnake 	Found in Ontario
Prairie Rattlesnake 	Found in Alberta and Saskatchewan

Spider Bites

Very few spiders in Canada can cause serious illness or death. The bites of harmless spiders often cause reactions similar to those of bee stings (e.g., swelling, redness, and stinging or pain at the site). However, one type of venomous spider is occasionally encountered in Canada: the black widow. The bite can, in rare cases, be life-threatening.



Black Widow Spiders

The black widow spider is black with a reddish hourglass shape on the underside of its body. Its bite is the most painful and deadly of all the widow spiders, especially for very young children and older adults. The bite usually causes an immediate, sharp, "pin-prick" pain, followed by dull pain in the area of the bite. However, the person often does not know that he or she has been bitten until he or she starts to feel ill or notices a bite mark or swelling.

The signs and symptoms of a black widow spider bite (e.g., abdominal cramps), can mimic those of other medical emergencies. Anyone with a suspected bite should be seen by a doctor for correct diagnosis and treatment.

What to Look For

Signs and symptoms of spider bites depend on the amount of venom injected and the person's sensitivity to the venom. Most spider bites heal with no adverse effects or scarring. Signs and symptoms of venomous spider bites can seem identical to those of other conditions and therefore can be difficult to recognize. The only way for a First Aider to be certain that a venomous spider has bitten a person is to have witnessed it.

Black Widow Spider Bite

Signs and symptoms of a black widow spider bite include the following:

- A raised, round, red mark
- Cramping pain in the thighs, shoulders, back, and abdominal muscles
- Restlessness and anxiety
- Dizziness
- Headache
- Excessive sweating
- Weakness

What to Do

Call

Call EMS/9-1-1 only if you suspect the person has been bitten by a black widow spider.

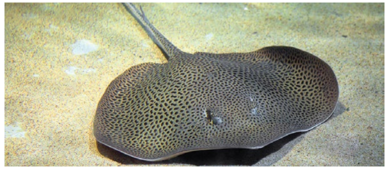
Care

To care for a bite from a non-venomous spider:

1. Wash the area with water.
2. Apply a cold pack wrapped in a thin, dry towel to help reduce pain and swelling.

To care for a spider bite from a black widow spider:

1. Have the person rest quietly.
2. Apply a cold pack wrapped in a thin, dry towel.



Stings from Marine Life

Many forms of marine life (e.g., jellyfish, stingreys, sea urchins, stinging coral, and spiny fish) cause stinging wounds. In Canada, stings from marine life are usually from jellyfish, though stingreys can also cause injury. Stings from marine life can have effects that range from merely painful to potentially life-threatening.

What to Look For

The signs and symptoms of a sting from marine life include the following:

- Pain
- Rash
- Redness
- Swelling
- Puncture wounds
- Lacerations
- Stingers, tentacles, or pieces of the animal on the person's skin
- Changes in level of responsiveness

What to Do

Call

Call EMS/9-1-1 and get an AED if the person is having airway or breathing problems, the person was stung on the face or neck, or you do not know what caused the sting.

Care

1. Get the person out of the water as soon as possible.
2. Flush the injured area.
    - For the stings of most jellyfish: Flush the injured area with vinegar for at least 30 seconds to counteract the toxin. If vinegar is not available, mix baking soda and water into a paste and leave it on the area for 20 minutes.
    - For the stings of Portuguese man o' war (bluebottle jellyfish), stingreys, sea urchins, or spiny fish: Flush the area with ocean water.
3. While wearing gloves or using a towel, carefully remove any stingers, tentacles, or pieces of the animal.
4. Keep the injured part still and soak the affected area in water as hot as the person can tolerate (no more than about 45°C [113°F]) for at least 20 minutes or until the pain is relieved.
5. If hot water is not available, use dry hot packs, or, as a second choice, dry cold packs to help decrease the pain. Remember to wrap the hot or cold packs in a thin, dry towel or cloth to protect the skin. Do not rub the area or apply a bandage.
6. Check with a healthcare provider to determine if a tetanus shot is necessary and monitor the wound for signs and symptoms of infection.

! Do not flush any jellyfish sting with fresh water, ammonia, or rubbing alcohol because these substances can increase the person's pain.

14 Childhood Illnesses

Caring for children, either at home or in a child care setting, involves special considerations. Children often have a higher risk of complications from illnesses and there are certain diseases that children are more susceptible to. Young children, especially, may not yet be vaccinated against diseases that most adults are immunized against.

Infections can spread quickly between children, as they don't always follow proper hygiene procedures (such as blowing their noses and washing their hands). Child care settings have special notification and disinfection procedures, so ensure that you are aware of the protocols that apply to your workplace and follow them carefully.

Protecting Children from Infection

In a child care setting, protect children from infectious diseases by:

- Insisting that staff members who are sick not come in to work.
- Encouraging parents and guardians to keep sick children at home.
- Having an isolation room for children who unexpectedly become ill.
- Washing your hands before and after contact with a child who has diarrhea or is vomiting.
- Washing bedding and equipment at least once a week, or every day when children are sick.
- Teaching children the importance of covering their mouths (preferably with the inside of their elbow) when they cough or sneeze and washing their hands afterward.

In a child care setting, follow these guidelines for cleaning the bathroom:

- Clean and sanitize the bathroom sink, countertop, toilet, and floor with an approved cleaning solution once a day.
- If you use the bathroom sink to clean toilet trainers, use an approved cleaning solution to sanitize the sink afterward.

Questions to Ask Yourself If You Think a Child May Be Ill

It can be more difficult to identify illness in a child than in an adult, because children may not be as good at communicating what is wrong. If you suspect that a child may be ill, ask yourself the questions in the following table. If you answer "yes" to any, it may be a sign of illness.

Area to Watch	Questions to Ask
Behaviour	Is the child: • Confused? • Unusually sleepy? • Unusually irritable or fussy? • More active or more subdued than normal? • Not interested in other children or play? • Crying nonstop, even when cuddled?
Face	Does the child: • Have a different colour of skin than usual? • Show signs of pain or anxiety? • Have bluish lips? • Have any swelling?
Skin	Does the child have: • Hot and dry skin or cold and moist skin? • A rash or spots? • An unusual skin colour? • Itchy skin? • Any bruising or swelling?

Area to Watch	Questions to Ask
Eyes	Does the child: • Rub and scratch his or her eyes? • Have red and inflamed eyes? • Have discharge in his or her eyes? • Have dull or unusually bright eyes? • Have swollen or puffy eyes? • Have yellow eyes? • Complain of seeing spots?
Ears	Does the child have: • Trouble hearing? • Swelling in or around the ears? • Ringing in the ears? • An earache? • Any discharge? • Loss of balance? • A tendency to pull, cup, or poke his or her ears?
Tongue	Does the child have a: • Dry and cracked tongue? • Red and raw tongue? • White or yellow coating on his or her tongue?

Area to Watch	Questions to Ask
Breathing	Does the child have: • Rapid shallow breathing? • Painful breathing? • A strange odour on his or her breath?
Throat	Does the child have: • A sore throat? • Difficulty swallowing? • Unusual drooling? • A red and inflamed throat? • A voice that sounds different?
Cough	Does the cough: • Occur frequently, and is it dry? • Bring up sputum? • Sound unusual?
Appetite	Does the child have: • Little or no appetite? • An unusual level of thirst?

Area to Watch	Questions to Ask
Vomiting	Is the child: • Unable to keep food or water down? • Nauseated? • Frequently vomiting? • Projectile vomiting?
Temperature	Does the child: • Complain about feeling very cold? • Complain about feeling very hot? • Shiver uncontrollably?
Bowel Movements	Are the child's bowel movements: • Abnormally frequent and liquid? • Abnormally infrequent, dry, and hard? • Abnormal in content, such as undigested food, mucus, or blood? • An unusual colour or odour?

When to Call EMS/9-1-1 for a Child in Your Care

Call EMS/9-1-1 if the child is unresponsive or for any life-threatening emergency. Life-threatening emergencies are emergencies that involve the child's ABCs, including:

- Choking
- Respiratory distress
- Life-threatening bleeding

In these situations, you should call EMS/9-1-1 first, then call the child's parent or guardian.

> ! If you work in a child care facility, follow your facility's policies and local legislation around when you should call EMS/9-1-1 and/or notify the child's parent or guardian.

When to Call the Parent or Guardian of a Child in Your Care

Call the child's parent or guardian if:

- The child has a fever.
- The child has diarrhea more than twice in a day.
- The child has been vomiting.
- The child has an injury that requires medical attention.

For minor issues, such as a small cut, a change in behaviour (e.g., not playing as usual), or a change in appetite, you should inform the parent or guardian when he or she picks the child up.

Common Childhood Conditions: Guidelines for Care

Some childhood illnesses and conditions are contagious. Some conditions cause irritation and discomfort, while others can cause lifelong complications or even death. Preventive practices include proper hygiene (including routine hand washing) and limiting exposure to people who are ill.

Vaccination is also a fundamental preventive strategy. Vaccines have been incredibly effective in preventing childhood diseases and decreasing child mortality rates. Common childhood vaccines include diphtheria, tetanus, pertussis, measles, mumps, rubella, meningitis, polio, pneumococcal disease, Haemophilus influenzae, COVID-19, the flu (influenza), and chickenpox (varicella).

Provincial/territorial legislation dictates which contagious diseases must be reported to the local licensing body and/or health authority. It is important for child care workers, parents, and guardians to understand their responsibilities about reportable conditions.

> **!** Follow your health care provider’s directions and child care setting’s policies about when a child can return to the child care setting after experiencing any of the following conditions.

Childhood Conditions

Conditions	What to Look For	What to Do	Remember
Eczema • Not contagious Note: Eczema sores can become infected.	• Inflamed skin • One or a combination of rashes, pimples, scaly skin, and scabs • Dry skin, or skin with a watery discharge • Itchy or burning skin	• Soften crusts and dry skin with cold cream or oil. This often relieves itching. • Prepare a lukewarm bath (39.6°C [103°F]) for the child. • Do not scrub the affected area with soap. • Eczema can often be helped with medication prescribed by a doctor.	Eczema may be caused by stress or it may be an allergic reaction to something in the child's environment or diet. Eczema in babies is often related to allergies. This type of eczema does not respond to creams and does not heal easily.
Impetigo • Bacterial infection • Contagious	• Inflamed skin • Clusters of pimples filled with straw-coloured fluid that become crusted and break, found around the mouth and nose; may be flat and pitted	• Wash the infected area frequently with soap and water. • Doctors often prescribe antibiotic ointments or creams for the treatment of impetigo.	Impetigo can spread through contact with infected skin or items that have contacted infected skin (e.g., clothing, towels, and bed linens). Careful handwashing by both the child and the caregivers is the best prevention.

Childhood Conditions

Conditions	What to Look For	What to Do	Remember
Ringworm • Fungal infection • Very contagious	• Red, scaling rings on the skin	• Clean the area twice a day with mild soap and water. • Doctors often prescribe anti-fungal medication for ringworm, which should be applied after cleaning the affected area.	A child with ringworm is contagious until 48 hours after treatment begins, and so should not return to the child care setting or school before this time has passed.
Scabies • Skin parasite • Very contagious	• Many tiny blisters, scratch marks, and scaly crusts found mainly in skin folds (e.g., between fingers, on wrists, on the torso, and on genitals) • Extreme itchiness	• Bathe the child prior to medication application. • After the bath, apply the special lotion prescribed by the doctor.	Scabies is a skin parasite called the “human itch mite.” The scabies mite is passed by direct skin-to-skin contact, so everyone in the household should be treated at the same time. After treatment, wash all bed linen, underclothes, sleepwear, and blankets, or press them with a hot iron.

Childhood Conditions

Conditions	What to Look For	What to Do	Remember
Prickly Heat Rash • Not contagious	• A rash of tiny, pinpoint blisters surrounded by blotches of pink skin • A rash on the face or on the parts of the body that are most heavily clothed • Occurs in hot weather or whenever a child or baby is overdressed	• If the child or baby is feverish, give him or her a sponge bath. • Pat the skin dry to avoid rubbing the skin. • Dress the child or baby in layers, and remove layers as necessary. • Replace wet or sweaty clothing immediately.	Prickly heat rash rarely bothers the child, but if there is a fever at the same time, the child may be irritable.
Diaper Rash • May be contagious, depending on the underlying cause	• Red, scalded appearance that does not fade when left un-diapered and exposed to air • Pimples or sores found in the diaper area	• Wash and dry the area well. • Expose the area to the air. • Change diapers often. • Use a zinc-based cream. • If the rash does not clear up within 48 hours, or you are concerned about the underlying cause, seek medical attention.	Some diaper rashes are yeast infections. Watch for whitish, curd-like deposits found in genital folds that are not easily wiped away. These may need to be treated with prescription ointment.

Childhood Conditions

Conditions	What to Look For	What to Do	Remember
Lice • Contagious	• Small white eggs (nits) on the scalp or in body hair (nits look like dandruff but cannot be washed off) • Live lice (dark and slightly bigger than nits) on the scalp or in body hair • Pustules and scabs on the scalp due to scratching	• Wash the child's hair with the medicated shampoo recommended by a doctor, then comb it with a fine-toothed comb to remove nits. • Disinfect all clothing and bedding by having them dry-cleaned, washing them in very hot water, or freezing them for 72 hours. Items such as stuffed animals should also be disinfected, and then sealed in a plastic bag for 3 weeks. • The whole family may need to be treated. • Vacuum the environment regularly during the treatment period.	Lice are very common among children because they play closely together. However, anyone can get lice. Lice is not caused by a lack of personal cleanliness. Always store children's headgear separately and do not allow children to share brushes and combs.

Childhood Conditions

Conditions	What to Look For	What to Do	Remember
Pink Eye (Conjunctivitis) • Bacterial infection • Contagious	• Pink colouration of the white of the eye • Swollen eyelids • Pus on eyelids • Itchy or sensitive eyes	• Seek medical attention: doctors often prescribe antibiotics. • Protect the eyes from bright light. • Do not let children share towels or washcloths. • The child should not rub or touch his or her eyes. • Use warm water compresses to remove pus.	Pink eye can be bacterial or viral, is transmitted through direct contact, and is very contagious.
Pinworms • Very contagious	• Constant scratching around the anus • Unusual irritability • Restlessness or inability to sleep at night	• Wash the child's hands and nails (using a nail brush). • Keep the child's fingernails short and discourage nail biting. • Make sure the child has a daily bath or shower and a daily change of towels, sheets, and underwear. • Doctors often prescribe oral medication. • The whole family must be treated.	Pinworms are intestinal parasitic worms. Tiny eggs deposited around the anus by a female worm spread the infection.

Childhood Conditions

Conditions	What to Look For	What to Do	Remember
Chickenpox - Viral infection - Contagious	- A rash of tiny red spots covering the skin - Fluid-filled blisters and scabbing on the skin - Fever - Itchiness	- Try to make sure the child does not scratch. - Give fever-reducing medications as recommended by a doctor. - The doctor may also recommend a cream to relieve itching.	Chickenpox is most contagious 1 to 2 days before the rash appears, and for approximately 5 days after onset, or until the lesions have become crusted. Chickenpox is transmitted by direct contact with blisters or body fluids, or through coughing and sneezing.
Diarrhea - Usually a symptom of an underlying condition, which may or may not be contagious	- Unusually frequent and liquid bowel movements - Pain or bloating in the abdomen - Dehydration	- Seek medical attention if there is vomiting or blood in the stool, or if diarrhea persists for more than 72 hours. - Disinfect diaper-change areas and toilet areas very carefully. - Isolate the child. - Give the child plenty of clear fluids for 24 hours. - If the child has two or more episodes of diarrhea, give fluids with electrolytes (e.g., sports drinks or coconut water).	Diarrhea may be a symptom of an infection. Food poisoning or a change in diet can also cause diarrhea. For child care workers and babysitters: Call the parent or guardian if a child has diarrhea more than twice during the day.

Childhood Conditions

Conditions	What to Look For	What to Do	Remember
Dehydration • Not contagious	• Dry mouth and tongue • No tears when crying • Sunken eyes • Less frequent urination or urine that is darker than usual • In babies, the soft spot on the top of the head is sunken	• Seek medical attention. • Continue to give fluids.	Dehydration results from a loss of bodily fluids. Dehydration in children is most commonly caused by prolonged vomiting and diarrhea. It can be life-threatening.
Earaches • Not contagious	• Fever or chills • Deafness • Dizziness • Nausea • Fluid from the ear • A worried appearance • Pulling at the ear or covering it with the hand • Pain	• Seek medical attention. • The doctor may recommend an antibiotic.	Never put anything into the ear canal (e.g., a cotton swab), even if fluid or discharge appears.

Childhood Conditions

Conditions	What to Look For	What to Do	Remember
Persistent Vomiting - Usually a symptom of an underlying condition, which may or may not be contagious	- Nausea - Stomach pain	- Give the child plenty of fluids. - When the vomiting subsides, give small amounts of easily digestible food, such as toast. - If the vomiting continues for more than 24 hours, signs of dehydration appear, or the vomiting is associated with diarrhea or pain, seek medical attention.	Persistent vomiting could be caused by illness, emotional upset, food poisoning, or a reaction to medication or a new food.

Childhood Fevers

A fever is one of the body's defense mechanisms. A mild fever should not be a concern unless it continues for more than 2 days. If the child's fever lasts more than 48 hours, or if the child is not behaving as they usually do, seek medical attention.

A fever alone is not a clear indicator of how sick a child is. A child may be very sick and not have a fever, or may be running a fever and playing happily. The best way to gauge the severity of an illness is to note changes in the child's behaviour.

Taking a Child's Temperature

Normal body temperature is 37°C (98.6°F). Anything higher than 37.8°C is considered a fever. To determine a child's temperature you must use a thermometer. Many types of digital thermometers are available, including those intended for use in the mouth and ear. Follow these general principles when taking a child's temperature, along with any specific manufacturer's instructions for your thermometer.

What to Do

1. Wash your hands thoroughly.
2. If taking the temperature orally, make sure that the child has not had anything hot or cold to eat or drink in the previous 10 minutes.
3. Clean and reset the thermometer as per the manufacturer's guidelines.
4. Place the thermometer in the child's mouth (under the tongue) or in the child's ear.
5. Leave the thermometer in place until it beeps, or for up to 1 minute (if your model does not have an audio notification).
6. If you are using a thermometer for more than one child (e.g., in a child care setting), use protective covers and throw them away after every use.
7. Record the temperature, the time, and the method of taking the child's temperature (e.g., "oral").
8. Clean the thermometer after every use as instructed by the manufacturer.

Reducing a Child’s Temperature:

1. Children with fevers should be dressed lightly because they may feel warm. If they get too cold or start to shiver, cover them until the skin feels warm when you touch it.
2. Sponge the child with room temperature water.
3. Give the child plenty of fluids to ensure that he or she stays hydrated.
4. If the fever rises above 39°C (102°F) or persists for more than 2 days, seek medical attention.
5. Give fever-reducing medications, as discussed with the healthcare practitioner.

Complications Related to Fever

Reye’s Syndrome

Reye’s syndrome is a condition that is associated with children with fevers taking ASA (e.g., Aspirin®). Avoid giving ASA to a child or teenager with a fever.

Seizure

A child or baby may suffer a seizure during a high fever. If this occurs, follow the care steps for febrile seizures.

Giving Medication

When to Give Medications

Give medication to a child or baby in your care:

- Only if you have written permission from a parent or guardian for each medication that is to be given
- Only when the medication is in the original container with the original label
- Only when the medication is properly labelled with:
  - The child’s name.
  - The date the prescription was issued.
  - The instructions.
  - The time period during which the medication is to be taken.

If a child is being given non-prescription medication, ensure you have written permission from a parent or guardian for each medication that is to be given.

! Parents or guardians should give the first dose of a new medication so that they can watch for any unusual signs, symptoms, reactions, or behaviours in their children or babies.

General Rules for Medication

To reduce the risk of miscommunication and error, it is a good idea to have just one person in the child care setting who is responsible for giving all medications. Store all medication out of the reach of children.

When giving medication:

- Wash your hands thoroughly.
- Check the medication three times:
  - When you take the medication out from the cupboard or refrigerator
  - When you take the medication out of the package
  - Just before you administer the medication
- Keep a written record of the date and time the medication was given, the name of the child, the name of the medication, the person who gave the medication, and the amount given. Record all this information when you give the medication.
- Call the parent or guardian if the child cannot keep the medication down.
- Report to the parent, guardian, or doctor any reactions or effects not usually experienced by the child.
- At the end of each day, tell the parent or guardian what medication was given and at what time.
- Follow any specific directions for the medication (e.g., “do not take with food”).
- When applying topical medication, protect yourself by using an applicator or by wearing disposable gloves.
- Emergency medicine, such as inhalers or epinephrine auto-injectors, should be accessible at all times but out of the reach of children.

! Some provinces and territories have legislation regarding medication administration in child care settings. Always follow local protocols.

How to Give Specific Medications

Medication in the Eye

1. Have the child look up while in a lying or sitting position.
2. Gently pull down the lower eyelid.
3. Hold the dropper horizontally about 2.5 cm (1 in.) out from the child’s eye.
4. Drop the medication into the little pocket between the lower lid and the eyeball.
5. Ask the child to close the eye then briefly hold a cotton ball against the inside corner of the eye. Use a separate cotton ball for each eye.
6. Wipe away any excess medication.

Medication in the Nose

1. Have the child lie on a flat surface with his or her head hanging over one edge. If the child must sit up, have the child tilt his or her head back as far as possible.
2. Place the exact number of drops indicated in the prescription into each nostril.
3. Have the child remain with his or her head back for a few minutes.

15 Caring for Children

Children are very vulnerable. Their bodies are more susceptible to injury, and they are typically less aware of risks and hazards in their environments. When caring for children, prevention, preparation, and constant supervision are critical to preventing injury.

Toy and Equipment Safety

Products designed for children have many features to keep them safe, but these products must be selected and used properly.

You should always discard broken equipment and toys immediately, and always follow the manufacturer's directions for safe use. When considering second-hand equipment or toys, first check the label and contact Health Canada to find out if there has been a recall or safety alert on that specific model.

Equipment for Babies

Safe Use of Cribs

- Cribs manufactured before September 1986 do not meet current safety standards and should be disassembled and either thrown away or taken to your local recycling centre.
- Manufacturers of cribs are required to include a label showing the date of manufacture. If there is no label, assume that the crib is not safe to use.
- Allow only one small toy inside the crib and remove all mobiles or activity centres as soon as the baby can pull him- or herself up.
- Place the crib well away from potential hazards such as blind cords, windows, pictures, and shelves.
- When a child shows signs of trying to climb out of a crib, it is time to move the child to a bed or mattress on the floor.
- Keep the wheels on a crib locked whenever it is in use.
- Make sure that the crib slats are no more than 6 cm (2 3/8 in.) apart.
- Make sure that the corner posts extend no more than 3 cm (1 1/4 in.) above the headboard and footboard.
- The height from the mattress support to the top rail must be at least 66 cm (26 in.) when the support is in its lowest position.
- Make sure the mattress fits snugly inside the crib. Use only mattresses sold for use in cribs. Any other substitutes, such as foam pads, may allow for pockets or spaces in which a child may get stuck or be smothered.

Safe Use of Playpens

- Manufacturers of playpens are required to include a Canadian Standards Association (CSA) label showing that the playpen has been approved by CSA. The label also shows the playpen's date of manufacture. Any playpen manufactured before 1985 has not been approved by the CSA. If there is no label, assume that the playpen is not safe to use.
- If a child shows signs of trying to climb out of a playpen, the playpen is no longer safe for that child.
- Ensure that the playpen's wheels are locked whenever it is in use.
- Make sure that playpen walls are sturdy and at least 48 cm (19 in.) high.
- Inspect the playpen regularly to ensure that there are no hazards such as rips or exposed sharp edges.

Safe Use of High Chairs

- Do not allow older children to climb on the chair, even when it is unoccupied.
- A safe chair is stable and has a wide base to reduce the risk of tipping.
- The harness should consist of a strap that fits between the child's legs and a waist belt that is easy to fasten and is in good condition.

- Ensure that the child's hands, arms, and legs are clear of any moving parts before making adjustments to the chair or the tray.
- Keep the chair a safe distance away from hazards such as windows, blind cords, and mirrors, or surfaces that a child could push off of such as walls, doors, or furniture.

Safe Use of Baby Strollers

- Manufacturers of baby strollers are required to include a Canadian Standards Association (CSA) label showing that the baby stroller has been approved by CSA. The label also shows the stroller's date of manufacture. Any stroller manufactured before 1985 has not been approved by the CSA. If there is no label, assume that the stroller is not safe to use.
- Do not load heavy parcels on the back or on the handles of the baby stroller. These could cause the stroller to tip backward.
- Use a stroller with safety straps that go around the child's waist and between the legs.
- Keep children's fingers away from moving parts.

Safe Use of Pacifiers

- When purchasing a pacifier, make sure it is from a reputable manufacturer.
- Check pacifiers regularly for wear and tear. Discard them immediately if there is any sign of deterioration, such as discolouration, hardening, or cracking of the nipple.
- If a doctor diagnoses a child or baby with a yeast infection of the mouth, immediately discard any pacifier the baby is using. Give the baby a new one only after the infection has cleared.
- Use a pacifier clip, as opposed to a cord, to secure the pacifier to the child.
- A teething ring should be used instead of a pacifier once the baby's teeth start to appear.

Equipment for Children

Safe Use of Child Bike Trailers

- Child bike trailers are recommended over child bike carriers because they reduce the risk of falls, do not cause as many steering and balance problems, and increase protection from the weather. They are also farther from the bicycle wheels, ensuring that the child cannot reach the spokes.
- If possible, choose a bike trailer that has a five-point harness and roll bar.
- Attach a tall, bright flag to the trailer.
- Connect the trailer with a flexible joint so that it will not tip over, even if the bike does.
- As a bike trailer is wider than a bike, ensure that the wheels do not go over the road edge.
- Ride in low-traffic areas.
- Ensure that children wear Canadian Standards Association (CSA) approved and properly fitting helmets.

Safe Use of Safety Gates

- Use only approved safety gates. Avoid makeshift alternatives, such as pieces of furniture.
- Manufacturers of safety gates are required to include a label showing the date of manufacture. If there is no label, assume that it is not safe to use.
- If you can fit a pop can between the railings, a child could get stuck and the gate is not safe.
- Install safety gates wherever stairs are exposed (at the top and bottom of the staircase). Make sure they are properly fitted and secure.
- If the gate has a pressure bar, make sure it is on the side away from children.

- Always open and close gates to pass through. Climbing over a gate is unsafe and may cause an injury. It also models unsafe behaviour to children.
- Safety gates are not a substitute for constant supervision. Always monitor children closely, even if a safety gate is in place.

Toys for Children and Babies

The following are guidelines to keep children safe when playing with toys:

- Follow the manufacturer's directions for safe use, including suggested age level.
- Choose toys that are appropriate for the children who will be using them. The Canadian Toy Testing Council issues a list of guidelines for choosing toys.
- Toys must be cleaned daily in child care centres. To clean toys and equipment, use a solution of 6 mL (1 tsp.) of bleach to 400 mL (1¾ cups) of water. Label the bottle and make a fresh solution every day.
- When there are older children in the same space, their toys may have smaller parts: These toys should be separated and stored out of common play areas.
- Avoid toys with sharp edges.
- Paints, crayons, and markers must be completely washable and non-toxic.
- Ensure that toys (and all of their detachable pieces) are too big to fit into the baby's or child's mouth, ears, or nose.
- Provide only toys without strings because strings may cause strangulation.
- Inspect toys regularly. Discard any pieces that are loose. If the toy seems unsafe, discard it immediately.
- Wooden toys should be glued or screwed together instead of nailed.
- Ride-around or ride-on toys must be selected according to the size of the child.
- Children should wear all safety equipment that is recommended for the activity. "Toy" protective gear (e.g., plastic helmets) is for imaginative play only.
- Electrical toys must bear the Canadian Standards Association (CSA) label.
- Choose costumes that are made of flame-retardant materials. Use face paints instead of face masks to avoid blocking vision.
- Large toy boxes and other containers must have air holes and self-supporting hinges if they have lids. This is necessary in case children decide to hide inside.

Playground Safety

Playgrounds are the site of many serious injuries, mainly falls. Some playground equipment can be unsafe or inappropriate for certain age groups. The following points help to keep children safe on the playground:

- Examine park and school playgrounds for hazards such as broken glass or exposed sharp edges.
- Ensure that children use playground equipment as intended (e.g., ensure that they do not climb on the outside of a tubular slide).
- Ensure that there are enough adults present to watch all children carefully.
- If you see unsafe or broken equipment in a playground, report this to the managing agency (e.g., community centre, park board, school board).
- If you are installing or maintaining playground equipment, consider the age and size of the children who will be using it, and follow the manufacturer's directions.
- Ideally, sandboxes should be fitted with a cover to keep dogs, cats, and other animals from using it as a litter box.

! Provincial/territorial legislation specifies regulations for child care centre play equipment.

Car Safety

Motor vehicle injuries are the number one cause of death of children in Canada. Follow the guidelines on the safe use of car seats and the passenger rules for children to help ensure children's safety in and around motor vehicles.

Safe Use of Car Seats

The law requires that all children use appropriate and approved child-restraint systems, such as child or baby seats and booster seats. These must have a label stating that they conform to the Canada Motor Vehicle Safety Standards (CMVSS), administered by Transport Canada.

Use caution when buying or using a pre-owned child car seat. Buy the seat from someone you know, and check it carefully. Make sure the car seat has:

- Instructions and all necessary hardware
- Not been in a collision
- A CMVSS sticker and is less than 10 years old
- No discoloured (stress) marks or cracks
- No signs of wear or tears on the harness

Always follow the manufacturer's instructions for installation and use.

When driving with children who do not require a car seat, remember:

- Children under the age of 13 should ride in the back seat.
- If you absolutely must put a child in the front seat of a car that has an airbag, push the seat back as far as it will go.

Make sure that any child who is no longer in a car seat is secured with a seat belt. Show the child how to wear the belt. The lap belt should be low across the hips, and the shoulder belt should be over the shoulder and across the chest. If the seat belt does not fit properly, a booster seat should be used.

> **!** It is against the law to leave a child or baby alone in a car, even for a short time.

Passenger Rules for Children: Safety Education

Teach children the following rules for safety in and around motor vehicles:

- Always enter and exit the car on the curb side.
- Remain seated with your seat belt on while the car is moving. Stay that way until the driver has reached your destination and the car is completely turned off or the driver tells you it is safe to remove your seat belt.
- Remember that the driver needs to be able to concentrate on driving, so minimize distractions inside the car.
- Keep your head, arms, and feet in the car at all times.
- Remember that the car's controls are for the driver only. They are not for playing with, even when the car is parked.

> **!** As a caregiver, ensure that everyone's fingers, hands, and feet are clear of doors before the doors are closed. Ensure that any person driving children has adequate insurance coverage.

Safe Use of Wheeled Equipment

Choosing a Safe Bicycle

When choosing a bicycle for a child, ensure that it is the proper size:

1. Have the child stand over the bicycle seat with both feet flat on the ground.
2. Lift the bicycle up to the child's body (both tires off the floor). There should be at least 2.5 cm (1 in.) between the tires and the floor. Adjust the height of the seat as needed.

While on the seat, the child should be able to put the balls of his or her feet on the ground.

Regularly check the following for any bicycle used by a child:

- The brakes must work properly, and the child must be able to use them safely.
- The tires must be fully inflated.
- The wheels must be tightly secured and truly round.
- The chain must be oiled and tight.
- The spokes must be tight, straight, and unbroken.
- The seat post and handlebars must be securely attached.
- The bike must have a working bell or horn.
- The bicycle must pass the "bounce test": Bounce the bicycle up and down on its wheels on a paved surface and listen for shakes and rattles. A safe bike is a quiet bike.

! Local legislation may dictate what needs to be on your bike for safety (e.g., bike lights).

Choosing a Safe Helmet

Mishaps during sports that require a helmet are the leading cause of head injuries for children in Canada. Wearing helmets can reduce the risk of a serious or fatal head injury by up to 80%.

Keep the following points in mind when choosing a helmet for a child:

- Use helmets approved by the Canadian Standards Association (CSA), Snell Memorial Foundation, or American National Standards Institute (ANSI).
- A helmet should fit squarely on the child's head and have a snug chin strap.

If a helmet is involved in a fall, buy another one. Even if no damage is visible, the helmet may have lost some of its ability to absorb shock.

! As a role model and for safety reasons, adults should always wear a helmet while riding a bicycle.

Safe Use of Bicycles

Ensure that children follow these rules when using a bicycle:

- Walk bicycles across roads only at intersections and pedestrian crosswalks.
- Before you cross, make sure that traffic crossing your path is fully stopped at stop signs or traffic signals.
- Ride in a straight line when you go down a road or street. Do not swerve between parked cars or onto driveways. Always look and signal in plenty of time before turning.
- Wear bright clothes even during the day. When motorists can see a cyclist, it is easier for them to co-operate with the cyclist.
- Do not ride a bicycle after dark.

Even the safest cyclist must watch for drivers who aren’t paying attention!

It is important to teach children balancing, turning, hand signalling, and stopping on a bicycle before they go out riding. Practise these skills in the yard, a school yard, a park, or other low-traffic area.

Safe Use of Skateboards and Rollerblades

To keep children safe while skateboarding and rollerblading:

- Restrict skateboarding and in-line skating to children over 5 years of age.
- Allow children to use only playgrounds and paths built for skateboarding and in-line skating.
- Insist that children wear the correct equipment: a bicycle helmet approved by the Canadian Standards Association (CSA), Snell Memorial Foundation, or American National Standards Institute (ANSI), as well as elbow, wrist, and knee pads.
- Ensure that children wear bright clothing while skateboarding or in-line skating. This will make the children more visible and reduce the risk of collisions.

Fire Safety

Reducing Risk of Fires and Burns

The following tips can reduce the risk of fires and burns:

- Keep children away from heat sources and appliances such as cooking ovens, barbecues, space heaters, wood stoves, and fireplaces.
- Make sure all fireplaces and wood stoves are cleaned and inspected regularly to follow safety codes.
- Keep space heaters at least 1 metre (3 ft.) away from flammable objects such as curtains and furniture.
- Turn pot handles in toward the centre of the stove.
- Keep cooking areas free of clutter. This will reduce the risk of igniting pot holders, aprons, and other kitchen items.
- Snuff out candles immediately after use.
- Keep all hot drinks out of children’s reach.
- For nightwear, use only clothing designated as sleepwear. Other materials are sometimes more flammable. The government sets guidelines as to what is classified as sleepwear.
- Contact your local fire department for information on inspecting your home or workplace (including child care settings) for fire hazards and reviewing your fire escape plan.
- Make sure that smoke detectors are placed in all areas required by your local fire department or whichever agency regulates fire safety in your area. Change the batteries in all smoke detectors twice a year.
- Keep bedroom and sleeping-area doors closed when children are sleeping. Doors are important barriers to smoke.
- Make sure that all breakers and fuses on the electrical panel in your home, workplace, or child care setting are clearly labelled.
- Use only single-cord plugs, as multiple-cord or octopus plugs may overheat. Keep loose cords secured and out of the way to prevent tripping and to keep children from pulling them out.
- Keep an approved, all-purpose chemical fire extinguisher in the kitchen.

Fire Escape Plan

Draw a floor plan. Mark the normal exit from each room. Then mark an emergency exit, such as a window. This exit can be used if fire blocks the doorway.

Identify a location where everyone will meet if they must escape from a fire. Decide who will assist those who cannot get themselves out, such as young children or people with difficulty walking.

In professional settings, legislation may determine how often this escape plan must be practiced.

What to Do in the Case of Fire During the Night

1. When you hear the smoke detector, roll out of bed and onto the floor. Shout “Fire, fire, fire!” Be sure to shout it 3 times. Shout “Get out and stay out!” Teach children to do this as well.
2. Crawl to the door and touch it. If it is warm, do not open it. Unlock the door so that the firefighters can open it. Seal off any cracks with blankets or towels. Wet the blankets or towels if possible.
3. Escape via the emergency exit.
    - If you cannot get out, take refuge in a room with a window. Open it for ventilation. Hang a sheet out the window as a signal for help.
4. Join everyone at the special meeting spot.
5. After everyone is together, go to a neighbour’s home to call the fire department.
6. Meet the fire trucks and tell the firefighters that everyone has escaped the burning building.

Ice Safety

Safe Skating or Walking on Ice

Teach children these safety rules for skating or walking on ice:

- Ice must be a minimum of 15 cm (6 in.) thick before it can support one person. Ice must be solid, clear blue, and not covered with snow.
- Always skate with a buddy.
- If you cannot be sure how thick a section of ice is, do not walk or skate on it.

Ensure that children know what to do if they fall through the ice:

- In shallow water, feel for the bottom with your feet. Then walk toward the shore or bank, breaking ice as you go. Keep going until you can slide up onto thicker ice.
- In deep water, flutter-kick your feet and extend your hands forward along the ice until you can slide up onto it. Slowly crawl to safety.
- After you are out of danger, get to shelter and change into warm clothing. This will help prevent hypothermia.

Water Safety

General Tips for the Prevention of Drowning

- Pay constant attention to babies or children when they are in, on, or around water.
- Turn wading pools upside down when not in use.
- Empty buckets of water immediately after use.
- Keep toilet lids down and keep the bathroom door closed.

Safe Use of Bathtubs

- Always be present when a child or baby is in a bathtub or bathing basin. Drowning can occur even in a few centimetres of water.
- Check bathwater temperature by splashing water on your inner wrist. If it feels too hot or cold to you, do not place the child or baby in the bath until you have adjusted the temperature.
- If your bathtub is a Jacuzzi-type or is equipped with water jets, do not turn these on with the child or baby in the tub.
- Turn off all water taps tightly.
- Place a non-slip mat in the bathtub.

Safe Use of Backyard Pools and Hot Tubs

- Keep children under constant supervision when they are playing in or around a backyard pool or hot tub.
- Make sure basic life-saving equipment is available at all times. Examples of basic life-saving equipment are: (1) a strong, lightweight pole with blunt ends; and (2) a ring buoy with a long throwing rope. Be aware of equipment requirements outlined in the legislation that applies to your situation.
- Cover hot tubs securely and lock them when they are not in use.
- Keep decks around the pool or hot tub clean and free of debris.
- Pay close attention to the surface of a diving board. Make sure the slip-resistant surface is always in good repair. Ensure that the water is deep in the entire area that divers use (mark the slope of the pool to avoid hitting the upslope).
- Install a rope with buoyant markers across the pool where the deep end slope begins.
- Use only unbreakable cups, dishes, and other utensils at the poolside.
- Keep electrical appliances away from backyard pools.
- Remove all floating toys and store them in a secure area when pool time is over.
- Make sure electrical equipment used to operate the pool or hot tub conforms to electrical code requirements.
- Have a phone available on the pool deck. Post a list of emergency numbers beside it.
- Ensure that an outdoor pool is surrounded by a fence or wall that children cannot get through or over. Gates should have self-closing latches above the reach of toddlers. They should also include hardware for permanent locking. Obey the fencing requirements of your local municipality.
- Make sure all pool chemicals are stored in a secure area.

Safe Swimming

- Make sure that children and adults learn to swim.
- Ensure children are always supervised by a responsible adult.
- Establish sensible safety rules before children do any swimming. Enforce these rules consistently and firmly.
- Supervise even strong swimmers at all times. Sudden cramps can sink the most accomplished swimmer.
- Allow swimming only during daylight hours and in good weather.
- Remind non-swimmers and swimming supervisors of the dangers of relying on inflatable toys (e.g., inner tubes). Inflatable toys can leak and no longer provide support, and they can also create barriers to effective supervision.
- Ensure children stay within specified boundaries.
- When distance swimming at the beach, make sure that children swim parallel to the shore.
- Always know the depth of the water and ensure it is clear of all obstacles before diving.
- Post “No Diving” signs around above-ground pools.
- Allow only one person at a time on diving boards and waterslides.
- Ensure that swimmers stay away from the area underneath diving boards.

Safe Boating

- Make sure that all boat occupants are wearing approved lifejackets or personal flotation devices (PFDs). Look for lifejackets or PFDs with labels stating that they have been approved by Transport Canada or the Canada Coast Guard.
- As a parent, guardian, or caregiver of a child, set a good example by wearing your lifejacket or PFD and by following boating safety rules.
- Small crafts can be unstable. Teach children to stay low in the boat.
- Teach children how to use a boat radio and fire extinguisher in case of an emergency.
- Discuss and practise survival techniques often.
- Choose PFDs or lifejackets carefully to match the wearer's size and weight.
- Children should use PFDs fitted with crotch straps. The strap must be used when wearing the PFD.
- All pleasure crafts, power vessels, sailing vessels, canoes, kayaks, and rowboats must carry safety equipment that is in good working order. To find out exactly what is needed for your boat, contact Transport Canada.
- As of September 15, 2009, anyone operating a powerboat on Canadian waters must have a pleasure craft operator card. Contact Transport Canada for more information on where to obtain your certification.

Teaching Children Safety Awareness

Teach children how to get help in an emergency:

- Teach them to go to a trusted neighbour if they need help.
- Teach them about the Block Parent Program of Canada in your area, if applicable.
- Make a list of emergency phone numbers and teach children what to say when they call EMS/9-1-1:
  - Their name
  - The address they are calling from
  - What the problem is
  - The telephone number they are calling from
- Teach children to "hang up last" when they call EMS/9-1-1. This way the dispatcher will have all the necessary information.
- Teach children about traffic safety.

Child and Youth Protection

There are different types of abuse. It is important to be able to understand the different situations in which abuse toward children and youth may occur. Many of these situations are preventable, and if you are able to recognize the signs, you may be able to intervene on a child or youth's behalf.

Vulnerable Children and Youth

All children and youth live with some risk of experiencing abuse, violence, neglect, and bullying or harassment.

Abuse and Violence

Abuse and violence may take different forms: emotional, physical, and sexual.

Emotional abuse is defined as **chronic** attacks on a child or youth's self-esteem.

Physical abuse occurs when a person in a position of power or trust purposefully injures or threatens to injure a child or youth.

Sexual abuse occurs when a younger or less powerful child is used by an older or more powerful child, adolescent, or adult for sexual gratification.

Violence is the intentional threat or use of physical force or power. It can be directed against oneself, another person, a group, or a community. It usually results in injury, death, psychological harm, abnormal development, or deprivation.

Neglect

Neglect is the **chronic** inattention to the basic necessities of life, such as clothing, shelter, nutritious diet, education, good hygiene, supervision, medical and dental care, adequate rest, a safe environment, moral guidance and discipline, exercise, and fresh air.

Understanding Bullying and Harassment

Bullying involves a person expressing his or her power through the humiliation of another person.

Types of Bullying

- **Physical:** Hitting or kicking people, or taking or damaging their property or possessions.
- **Verbal:** Name-calling, insults, negative comments, and constant teasing.
- **Relational:** Trying to cut targets off from social connection by convincing peers to exclude or reject them.
- **Reactive:** Engaging in bullying, as well as provoking bullies into attacking, by taunting.
- **Cyberbullying:** Sending mean, cruel, and/or defamatory messages or images by electronic means (e.g., email, text messaging, instant messaging (IM), or personal and social websites).

Harassment

According to the Canadian Human Rights Commission (2019), discrimination is treating people "unfairly or negatively" on the basis of a prohibited ground of discrimination under federal, provincial, or territorial human rights legislation.

Types of Harassment

- **Personal harassment:** Based on an individual's personal characteristics that are prohibited grounds for discrimination (e.g., racism).
- **Sexual harassment:** Unwelcome behaviour of a sexual or gender-based nature that negatively affects the person or the environment.
- **Criminal harassment:** When the harassing behaviour contravenes Canada's Criminal Code; also referred to as stalking.

!

Abuse is a protection issue.

Bullying is a relationship issue.

Harassment is a human rights issue.

All need intervention and support.

Responding to Disclosures

A disclosure occurs when someone shares something with you in confidence. If someone discloses that they have experienced abuse, violence, neglect, or bullying, you must *always* act.

How to Respond to Disclosures

If you are responding to a disclosure, you need to ask yourself three basic questions:

1. **What do I need to know?**
2. **What do I need to do?**
3. **When do I need to do it?**

!

Your jurisdiction's Child Protection Act may govern how you must respond to a disclosure.

When abuse is suspected or disclosed, you have a responsibility to **ACT:**

A **Acknowledge** the child's situation and feelings.
Access support.

C **Comfort** the child and take him or her to a safe place.
Carefully listen to what the child says.

T **Take** notes and document what the child says and/or what you see. Take action—report the abuse immediately. Depending on the circumstances of the situation, use your judgment to decide if the child's parent or guardian should be contacted first (e.g., if he or she is being bullied or harassed by another child) or the child protection authorities and police in your area (e.g., if the abuse is coming from an adult).

Remember: You do not have to be 100% certain that abuse has occurred. If you suspect it, report it. The safety of the child may be at risk. The authorities have the responsibility to determine the facts and evidence, not you.

Children's Hygiene

Diapering

Follow these steps to ensure that diapers are changed in a sanitary way:

- Use disposable gloves and remove them before sanitizing the area.
- Set up your changing area close to running water, away from the kitchen or eating area.
- Ensure that the changing surface and area is cleaned for at least 30 seconds with a bleach solution after each diapering.
- Dispose of dirty cloth diapers in a pail with a snug-fitting lid. Diaper pails and garbage cans need to be put out of children's reach.
- Place disposable diapers into the garbage can immediately.
- Avoid washing soiled clothes. Place them in a sealed plastic bag to be picked up by the parent or guardian at the end of the day.

Dental Health

- Encourage children to brush their teeth every day.
  - A good time to brush is right after lunch. Use a pea-sized amount of toothpaste that contains fluoride.
  - Rinse the toothbrush well. When you put it away, make sure it is not touching other toothbrushes.
  - Replace the brush when the bristles become flattened.
  - Supervise young children when they are brushing.
- Children and babies' teeth can decay if they nap with a bottle because their soft teeth are constantly exposed to liquid with sugar. This is called nursing bottle syndrome, and it can be caused by:
  - Cow's milk
  - Juice
  - Formula
  - Sweetened liquids
- When children are between the ages of 1 and 2, encourage them to start drinking from a cup instead of from a bottle.
- Don't put honey, sugar, or syrup on soothers.
- Serve well-balanced meals. Too much sugary food is not healthy.
- Watch for the signs of tooth decay: dull, white or brown spots on the teeth.

16 Marine Basic First Aid

Marine environments have specific challenges and regulations. This means that the first aid you provide and how you access help may be different than on land.

It is important to know where to find your ship's:

- First aid station(s)
- First aid kits and equipment
- Medical supplies

Maritime Occupational Health and Safety Regulations (MOHS)

The Canada Labour code includes a document called the Maritime Occupational Health and Safety Regulations (MOHS). The MOHS outlines laws about first aid and medical care for people who work in marine environments, and is available for free online at laws-lois.justice.gc.ca. Make sure to familiarize yourself with the most recent version, since the MOHS is updated regularly.

When preparing a first aid kit for a ship, be aware that:

- The MOHS specifies what needs to be in first aid kits for vessels in Canada.
    - If you are working on an international ship, there may be different requirements for your first aid kits.
- The MOHS requires that first aid stations must be checked regularly.
    - The contents of first aid kits must be kept clean, dry, and usable, so that First Aiders have reliable and up-to-date supplies for any first aid emergency.

Hazards and Risks in a Marine Environment

In a marine environment, you may encounter a variety of hazards, including confined spaces, heavy machinery, and hazardous materials.

Confined Spaces

Confined spaces are likely to have:

- Poor ventilation
- An atmosphere that is low in oxygen
- Toxic or flammable gases

Never enter a confined space without the proper training and the authorization of the master or a responsible officer.

Heavy Machinery

Heavy machinery can cause workers to be:

- Injured by moving equipment or parts
- Crushed between equipment and other objects
- Electrocuted

Always follow all safety procedures and protocols carefully. Perform only tasks that you are qualified to perform.

Hazardous Materials

Hazardous materials in a marine environment can include:

- Engine and machine emissions
- Cargo
- Fuel
- Refrigeration chemicals (e.g., Freon)

Observe all warning labels, tags, and placards, and follow the required precautions.

It is important to follow all safety procedures and protocols carefully.

Emergencies on Board a Ship

What to Look For

Be aware of the regulations for your workplace and make sure to follow any instructions that you are given by the ship's master.

What to Do

☎ Call

If you need to access help for an emergency on a ship, the process is different than it would be on land.

Radio Medical Advice

Marine first aid attendants should generally not attempt first aid procedures that they are not trained to do, but there are certain circumstances where the illness or injury requires advanced medical procedures that no one aboard is trained for. You should access radio medical advice in these situations. Follow the physician's instructions.

According to law, every vessel must carry a complete and up-to-date list of the radio stations that first aid attendants can use to get medical advice.

You can access medical advice by:

- Mobile phone.
- Contacting a shore radio station by using a prearranged radio frequency on a radiotelephone and asking to speak to a physician. Some radio stations that you can contact for medical advice include:
  - A rescue coordination centre (RCC)
  - A Maritime Rescue Sub-Centre (MRSC)
  - A Marine Communications and Traffic Services centre (MCTS)
- Contacting a nearby port or nearby ship with a physician on board.

The advice that the medical advisor gives you will depend on the severity of the situation and the supplies and medical personnel that are available on board your ship. Have a list of the medications and supplies that you have on hand when you call a medical advisor.

Preparing Information for Radio Medical Advice

When seeking radio medical advice:

- Provide as much information as possible to the medical advisor, including:
    - Routine information about the ship
    - Routine information about the person
    - Details of the illness/injury
    - Findings from your secondary assessment
    - Care provided and the person's response to that care
- Repeat the information back to the advisor to make sure that the information is accurate.
- You may want to record the exchange on tape to help clarify any written notes.
- Write down any exchange of information for legal reasons.
- After the call, copy the notes, including the actions that were taken, into the ship's records and the ill or injured person's record.

You may need to fill out specific forms, such as:

- The Ship Master's Report form
- The Patient Health Status form
- The Medical Advice form

Radiotelephone Procedures

Transport Canada provides a reference regarding radiotelephone procedures (TP 9878E: Safety and Distress Radiotelephone Procedures), which should be displayed next to your vessel's radiotelephone. The procedures in this reference advise that safety and distress radio messages should be made on Channel 16 (156.8 MHz) or on frequency 2,182 kHz, MF.

The normal procedure to obtain radio medical advice is:

1. Make contact with the shore radio station and request medical advice.
2. Give the physician all of the information that you can so that they can make a medical assessment of the situation.
3. The physician will advise you on the immediate care for the person.
4. After the radio call is over, the physician will advise the search and rescue (SAR) authority or the coast guard service (such as an RCC) on the best method of evacuation.
5. If helicopter evacuation is necessary, the coast guard will keep in touch with the ship.

! The phonetic alphabet may be useful when clarifying important details over the radio.

Communication With Physicians

A written letter or form should always accompany any ill or injured person that is seeing a physician. If the physician does not speak the same language as you, they may understand a written note better than information that you give them verbally.

Care

Some ill or injured people may need to be transported to a hospital facility quickly, because of severe trauma or a medical emergency. In this case, the person needs medical evacuation from the ship. The vessel's chief officer is responsible for making decisions about medical evacuations.

Cold-Water Immersion

Cold-water immersion can occur in open water (e.g., when a boat capsizes) or after breaking through the ice. Although hypothermia occurs faster in cold water than cold air, the signs, symptoms, and care are essentially the same.

Cold-water immersion has four distinct phases:

1. **Cold-Shock Response:** Rapid cooling of the skin causes a gasp followed by hyperventilation (lasting 1 minute).
2. **Cold Incapacitation:** Further cooling of nerve and muscle fibres causes weakness and a loss of coordination, leading to incapacitation within approximately 10 minutes.
3. **Hypothermia:** A person dressed appropriately for the weather conditions will take approximately 1 hour to become hypothermic.
4. **Circum-Rescue Collapse:** Can occur just prior to, during, or after rescue. The signs and symptoms range from collapsing, to fainting, to cardiac arrest. When rescuing a person from cold water, monitor the person's condition carefully and be prepared to provide emergency care.

Most deaths in cold water result from the cold-shock response (when the head is under water) or drowning due to cold incapacitation. A properly worn personal flotation device (PFD) will keep a person afloat after he or she loses the ability to swim during the cold incapacitation phase.

What to Do (Rescue)

Self-Rescue

- If you are in open water, do a self-rescue by getting into a boat, raft, or other mode of marine transportation, if available.
- If you have fallen through the ice:
    1. Place your arms on the surface of the ice.
    2. Kick your legs until your body is horizontal to the water's surface.
    3. Kick and pull forward until you are on the ice.
    4. Roll away from the hole before standing up.

Survive to Await Rescue

If you are in open water and self-rescue is not possible, increase your survival time by doing the following:

1. Get out of the water as much as possible by using a capsized boat or other floating object as a flotation device.
2. If you are wearing a personal flotation device (PFD), adopt the Heat Escape Lessening Position (HELP):
    - Press your arms against your armpits.
    - Place your forearms across your chest.
    - Squeeze your thighs together and raise your knees toward your chest.

3. If several people are together, adopt the HUDDLE position:
    - Face each other.
    - Have each person squeeze his or her thighs together.
    - Form a circle and hug each other. Each person should place one arm above and one arm below the arms of those adjacent, and pull the sides of the chests together.
    - Sandwich any children or persons without a PFD inside the HUDDLE.

If you have fallen through the ice and are unable to exit by yourself, stop struggling. Place your arms on the ice and let them freeze in place. This will prevent you from drowning if the cold exposure causes incapacitation or unresponsiveness.

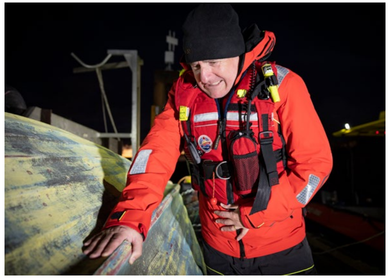
First Aider Rescue

To help rescue a person from cold water:

1. **Talk –** Instruct the person on self-rescue.
2. **Throw –** Throw a rope or buoyant object to the person.
3. **Reach –** Reach out to the person with a rigid object like a ladder, paddle, or tree branch.

Any person rescued from cold water should be treated for hypothermia. If the person is unresponsive and not breathing, begin CPR.

! Unless you have received specific training in water rescue, never enter the water or approach a hole in the ice to attempt to help a person.



Seasickness

Seasickness (motion sickness) is a sudden illness largely due to the motion of a ship or vessel. People who are not accustomed to the sea are most susceptible, but even experienced seafarers may be affected in rough water conditions.

Prevention

To help prevent and prepare for seasickness, people can:

- Stay hydrated.
- Eat light meals.
- Consult their care provider for medications that can help with seasickness.
- Take 1 to 2 grams of ginger (e.g., in tea or cookies).
- Sit in chairs with high backrests that face forward.
- Look outside at a central point on the horizon.
- Wear acupressure or acu-stimulation wristbands.
- Eat mint or peppermint.

What to Look For

Signs and symptoms of seasickness vary, but include:

- Loss of appetite, nausea, vomiting, or abdominal cramps
- Headaches, dizziness, or exhaustion
- Cold sweat
- Dry mouth
- Change in skin colour

What to Do

Call

It is not usually necessary to contact a care provider if a person is seasick, but if the person's seasickness is so severe that they cannot eat or drink and they become dehydrated, they may need to be evacuated to a care facility.

Care

- In mild cases, the condition will gradually wear off (often during sleep) and no specific treatment is necessary.
- Providing small portions of dry food (such as crackers) can help settle the person's stomach.
- Sucking on ice chips instead of drinking water will reduce the risk of vomiting while still preventing dehydration.
- More severe cases of prolonged vomiting may be managed with over-the-counter preventive medications.

Appendix A:
Kit Contents

Example of an Emergency Supplies Kit

Have supplies ready for an emergency. Store them in a backpack or a duffle bag so you can take them with you if you have to evacuate the area. The following are examples of the items to include in your emergency supplies kit:

- 4 L (1 gal.) of water per person per day (use sealed, unbreakable containers and replace the supply every 6 months). Have enough for at least 3 days.
- Non-perishable packaged or canned food and a can opener. Replace the food once a year.
- Walking shoes, rain gear, and a change of clothing.
- Blankets or sleeping bags.
- A first aid kit and prescription medications (check the medications every 6 months to make sure they haven't expired).
- Toilet paper and other personal supplies.
- An extra pair of glasses.
- A battery-powered radio and flashlight, along with extra batteries.
- Spare cash.
- An extra set of car keys.
- A list of your family doctors.
- Important family information such as a list of any medical conditions or medical devices, including pacemakers.
- Photocopies of all important identification for you and your family, including health card numbers.
- Special items for babies, elderly, or household members with disabilities.
- Mobile phone and contact information for family and friends.

Example of an Emergency Car Kit

Keep an emergency kit in your car. The following are examples of the items to include in your emergency car kit:

- A battery-powered radio and flashlight, with extra batteries
- A blanket
- Booster (jumper) cables
- A fire extinguisher
- A Canadian Red Cross first aid kit
- Bottled water and non-perishable high-energy foods (replace the water every 6 months and the food once a year)
- Maps of the area
- A shovel
- Flares
- A tire repair kit and pump
- Matches and a "survival" candle in a deep can that will burn for many hours

Appendix B:

Moving an Ill or Injured Person

Generally speaking, you should avoid moving an injured or ill person to give care. Unnecessary movement can cause additional injury and pain and may complicate the person's recovery.

Three general situations require you to move a person:

1. There is an immediate danger (either a danger to you or to the person being rescued), e.g., from fire, a lack of oxygen, risk of drowning, a possible explosion, a collapsing structure, or uncontrolled traffic hazards.
2. You have difficulty accessing ill or injured people. For example, a person with minor injuries may need to be moved quickly to allow access to other people who may have life-threatening conditions.
3. There is a barrier that makes it difficult to provide proper care. For example, a person with a medical emergency, such as a cardiac arrest or heat stroke, may need to be moved to provide proper care. For example, a person in cardiac arrest requires CPR, which should be performed on a firm, flat surface. If the person collapses on a bed or in a small bathroom, the surface or space may not be adequate to provide appropriate care, and the person will need to be moved.

Usually, you will not face hazards that require you to move the person immediately. In most cases, you can give the necessary care wherever you find the person. Needless movement of a person can lead to further injury, and therefore should be avoided. For example, moving someone with a closed fracture of the leg, without taking the time to splint it, could result in an open fracture if the end of the bone tears the skin. This may result in soft-tissue damage, damage to nerves, blood loss, and infection.

Some rescue situations make gaining access to people especially challenging, and as such require first responders who have specialized training and equipment. One such situation is when the ill or injured person is in a confined space. Confined spaces are particularly challenging because they:

- Are not designed or intended to have people in them
- Have restricted entrances or exits due to their location, size, or structure
- Can present a risk to the health and safety of anyone who enters (including first responders), due to one or more of the following factors:
  - Their design, construction, location, or atmosphere
  - The materials or substances inside
  - Work activities being carried out inside

Before you act, you must consider the limitations of the situation. Considering the following factors will help you ensure that you move a person quickly and safely:

- Dangerous conditions at the scene
- The size of the person
- Your own physical ability
- Whether others can assist you
- The person's condition

Failing to consider these factors could result in an injury to the First Aider—you. If you become injured, you may be unable to move the person and may risk making the situation worse. Back injuries (and other musculoskeletal injuries) can occur as a result of lifting and carrying a great deal of equipment during an emergency. If this happens at a scene, you will not be able to help and another First Aider will have to provide care for you, in addition to the other ill or injured person/people.

To protect yourself and the ill or injured person, follow these guidelines when moving someone:

- Attempt to move a person only when you are sure you can comfortably handle the rescue.
- Walk carefully, using short steps.
- Walk forward with the person, instead of backward, wherever possible.
- Always take the shortest, most direct route to your destination, as long as it is safe.
- Scan the pathway you want to use before moving so that you can identify potential hazards (such as slip hazards or poor lighting).

> **!** There are specific ways to deal with confined spaces (e.g., a grain silo, vat, or pipe). Without appropriate training, you are putting yourself at risk if you enter them. Ensure that the appropriate responders are on the way and manage the scene until they arrive. Only people with specialized training and equipment should enter confined spaces.

Body Mechanics

To reduce the risk of personal injury, everyone involved in a lift or carry should use proper body mechanics (also called "biomechanics"). The basic principles of body mechanics that can be used for all lifts and moves include the following:

- Use your legs, not your back, to lift. When lifting, use the muscles of your legs, hips, buttocks, and abdomen. Never use the muscles of your back to move or lift a heavy load.
- Keep the weight as close to you as possible. Reduce the distance you have to reach.
- Keep your body aligned. Imagine a straight line running from your shoulders through your hips and down to your feet, and then move them as a unit. This will reduce twisting forces.
- Reduce the height or distance you need to move a weight and lift in stages, if necessary.
- Keep your wrists and knees in normal alignment.

If performed incorrectly, reaching for a person or object can also injure the ligaments of your back. When reaching, keep your back locked (avoid hyperextending it) and never twist your back. You should avoid reaching more than 15 to 20 centimetres (6 to 8 in.) in front of the body as the muscles in your upper back and shoulders can only stay stretched in that position for a matter of seconds before they become fatigued and the risk of injury increases.

How to Move an Ill or Injured Person

There are many different ways to move someone to safety. The move is successful as long as you can move the person without injuring yourself, causing further injury to the person, or taking unnecessary risks.

Assists, carries, and drags are the different ways you can safely move an injured person. The most common of these moves include the following:

- Walking assist
- Two-person seat carry
- Clothes drag
- Blanket drag
- Extremity lift

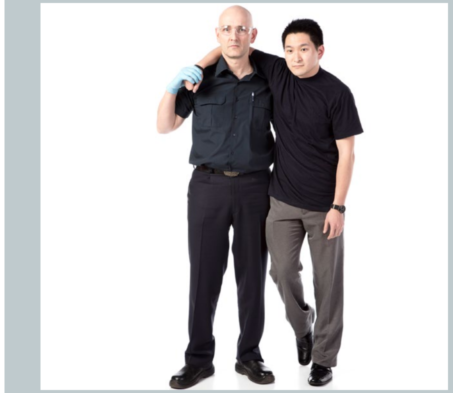
These moves can be performed by one or two people without specialized equipment. This is important because equipment is often not immediately available and time is usually critical when a person must be moved.

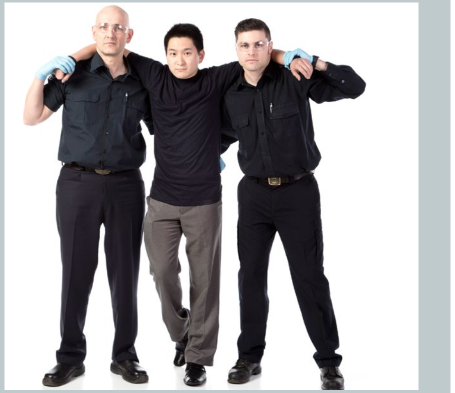
Walking Assist

The most basic move is the walking assist. It is used to help a responsive person who requires simple assistance with walking. Either one or two First Aiders can use this method.

To perform a walking assist:

1. Have the person stand up and position yourself on the person's weaker or injured side.
2. Place the person's arm across your shoulders and hold it in place with one hand.
3. Place your other hand around the person's waist. Your body acts as a "crutch," supporting the person's weight while you both walk.
4. A second First Aider can support the person in the same way from the other side.



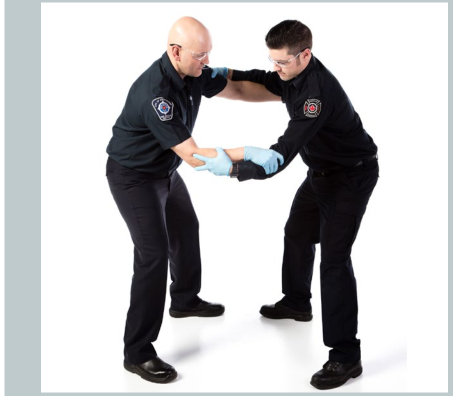


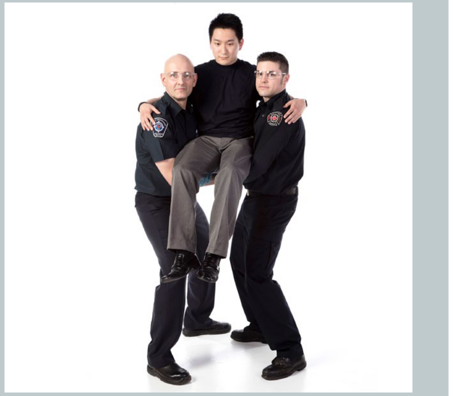
Two-Person Seat Carry

The two-person seat carry is a method for moving a person who cannot walk and who is not likely to have a head and/or spinal injury. It requires two First Aiders.

To perform the two-person seat carry:

1. Stand on one side of the person and have the other First Aider stand on the opposite side.
2. Put one arm under the person's thighs and the other across the person's back, while the other First Aider does the same.
3. Grab and hold the wrists of the second First Aider under the person's legs and behind the person's back while the second First Aider does the same to you.
4. Lift the person in the "seat" formed by your joined arms.



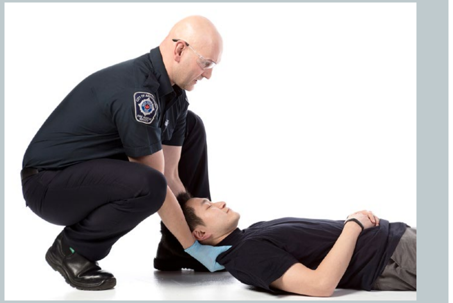


Clothes Drag

The clothes drag is an emergency move that is appropriate for someone suspected of having a head and/or spinal injury, as it helps keep the head and neck stabilized.

To perform a clothes drag:

1. Gather the person's clothing, such as a jacket or shirt, behind the person's neck.
2. Cradle the person's head using both his or her clothing and your hands, and keep the person's head, neck, and back as straight as possible.
3. Pull the person to safety.



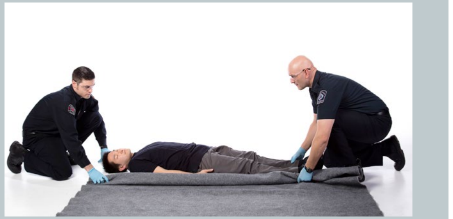
This type of emergency move is exhausting and may result in back strain for the First Aider, even when done properly.

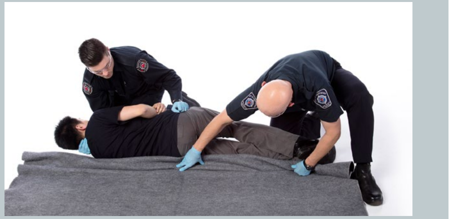
Blanket Drag

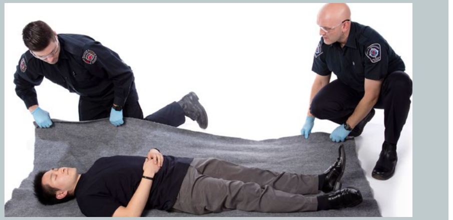
The blanket drag is an appropriate emergency move if you do not have a stretcher.

To perform a blanket drag:

1. Kneel beside the person and spread out a blanket on the person's other side.
2. Gather half of the blanket and place it up against the person's side.
3. Roll the person toward you, moving the person's body as one unit.
4. Tuck the gathered half of the blanket under the person as far as you can, and then roll the person back onto the blanket.
5. Wrap the blanket around the person and then drag him or her, holding the blanket around the person's head.





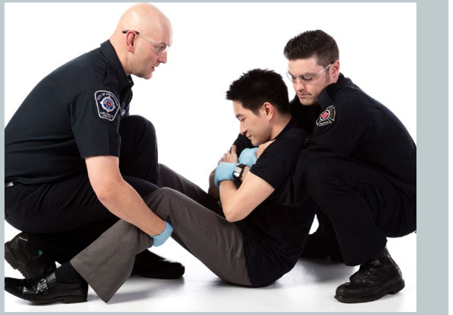


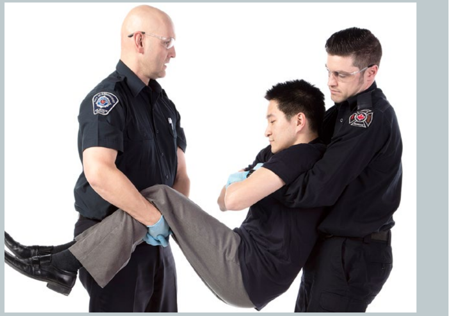
Extremity Lift

The extremity lift (also called a fore-and-aft lift) is performed with a partner. The extremity lift is not appropriate for a person with a suspected head or spine injury, or with injuries to the pelvis, arms, or legs. This move can be used to lift an unresponsive person from the floor to a chair.

To perform an extremity lift:

1. Crouch at the person's head. Have the other First Aider kneel, either beside or between the person's knees.
2. Place one hand under each of the person's shoulders and reach through to grab the person's wrists. Ensure that the person's back is close to your chest.
3. Have the other First Aider slip his or her hands under the person's knees.
4. On your signal, both of you should lift simultaneously.





Stretchers and Lifting Devices

There are many kinds of stretchers and lifting devices. The more common types are:

- Scoop stretcher (clamshell)
- Backboard
- Basket stretcher
- Multi-level stretcher (wheeled cot)
- Flexible litter
- Stair chair

Any of these stretchers will carry a person's entire body.

Scoop Stretcher

The scoop stretcher (also called a clamshell) is a lifting device suitable for lifting a person from the ground to another kind of stretcher or backboard. The scoop stretcher is only used for lifting and is not intended for carrying people across long distances. It allows people to be lifted without moving or rolling them. One disadvantage is that the person's back cannot be examined unless the person is rolled.

Backboard

The backboard (also referred to as the spine board or full board) is only used for lifting and is not designed to carry people across long distances. It is constructed of either plywood or plastic. Backboards are either rectangular in shape or tapered at one end. The board has holes cut along the sides through which straps may be placed to secure the person's body to the board. Most boards are approximately 1.8 metres (6 feet) long. If a backboard is used with a basket stretcher, the board must fit inside the stretcher.

Basket Stretcher

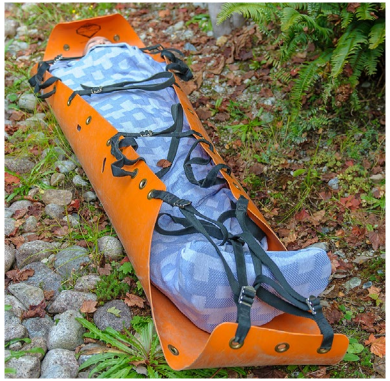
The basket stretcher, also called the Stokes basket, comes in various types and strengths. Traditional basket stretchers are constructed of metal support frames, usually combined with a wire mesh lining. Other basket stretchers have metal frames and high-impact plastic liners. Basket stretchers are commonly used for rescues and also as lifting devices.

Follow these guidelines when using a basket stretcher:

- Place blankets under the person for comfort.
- Place a backboard or litter board on the bottom to make loading and unloading easier.
- If used in combination with a scoop stretcher, the basket stretcher must be able to accommodate the scoop stretcher.
- Secure the person if the stretcher is to be carried over a long distance or the person is to be lowered or raised off the ground as in a low- or high-angle rescue.

Multi-Level Stretcher

This type of stretcher can be lowered or raised using release handles found at the end or side. This device is equipped with wheels. It has an adjustable head section and leg section. Each side of the stretcher has a safety rail. The stretcher should not be lifted using these rails. This stretcher is commonly used in transportation vehicles, such as ambulances.



Flexible Litter

A flexible litter has no rigid structure of its own. These devices are made of synthetic materials that require some type of spinal immobilization device to provide rigidity. Because they are flexible, they work well when moving people through narrow passageways. They wrap around the person, so the litter is little more than the circumference of the person's body. Flexible litters also have the distinct advantage of being usable with people of a variety of sizes, including those for whom a basket stretcher may be restrictive.

Stair Chair

A stair chair is used for transporting a person in a sitting position. It is used when a wheeled stretcher is deemed to be too long for the rescue or extrication. It is especially useful when there is a small elevator or staircase in which a long stretcher will not fit. The front wheels swivel to manoeuvre around tight corners and landings. Some stair chairs have a track that make navigating stairs or steep terrains easier for the First Aiders. When using the stair chair, it is recommended that three First Aiders be present to ensure a person's safety: two First Aiders to act as carriers and one to serve as a spotter for potential difficulties.

Appendix C:
Anatomy and Physiology

As a First Aider, you need a basic understanding of normal human structure and function. Knowing the body's structures and how they work will help you more easily recognize and understand illnesses and injuries. Body systems do not function independently. Each system depends on other systems to function properly. When your body is healthy, your body systems are working well together. But an injury or illness in one body part or system will often cause problems in others. Knowing the location and function of the major organs and structures within each body system will help you to more accurately assess a patient's condition and provide the best care.

Body Systems

The human body performs many complex functions. Vital organs are organs whose functions are essential for life, such as the brain, heart, and lungs.

A body system is a group of organs and other structures that are especially adapted to perform specific body functions. They work together to carry out a function needed for life. For example, the heart, blood, and blood vessels make up the circulatory system, which keeps all parts of the body supplied with oxygen-rich blood.

For the body to work properly, all of the body's systems must work well together. When one or more of the body systems does not perform its function properly, illness can occur.

Interrelationships of Body Systems

Each body system plays a vital role in survival. Body systems work together to help the body maintain a constant healthy state. When the environment changes, the body's systems adapt to the new conditions. For example, because the musculoskeletal system works harder during exercise, the respiratory and circulatory systems must also work harder to meet the body's increased oxygen demands. Your body systems also react to the stresses caused by illness or injury.

The impact of an injury or a disease is rarely restricted to one body system. For example, a broken bone may result in nerve damage that may impair movement and feeling. Injuries to the ribs can make breathing difficult. If the heart stops beating for any reason, breathing will also stop.

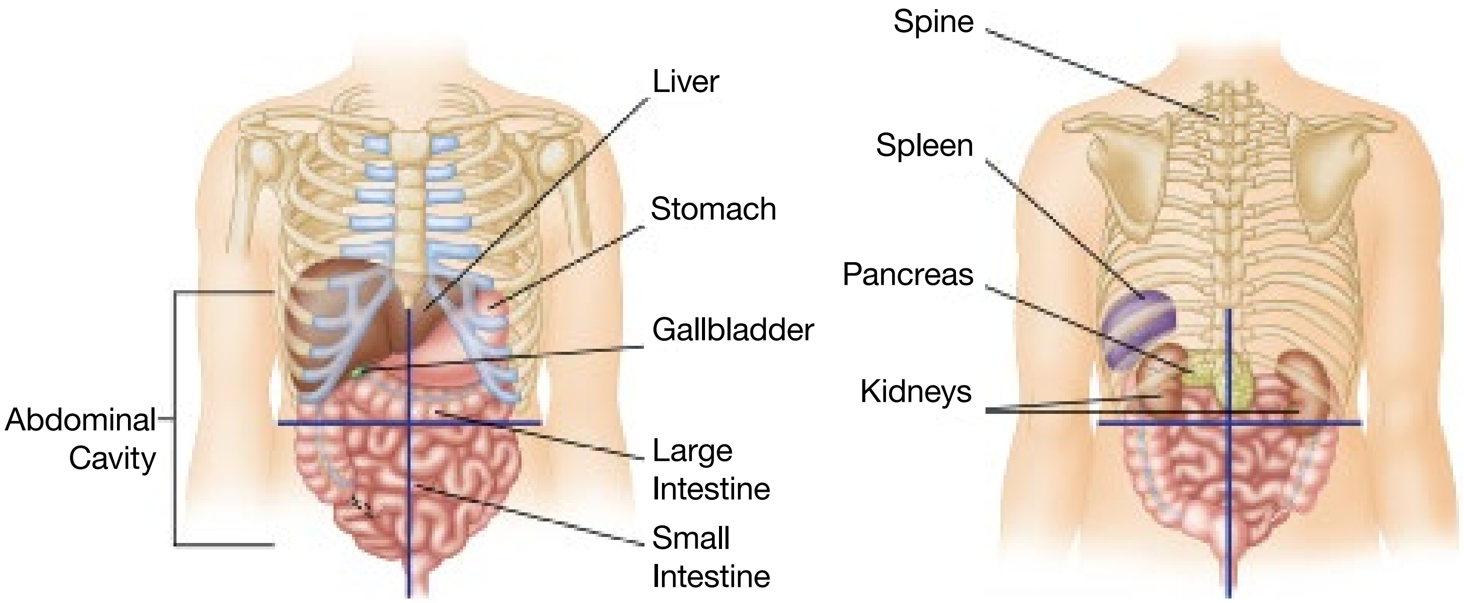
In any significant illness or injury, body systems may be seriously affected. This may result in a progressive failure of multiple body systems. Generally, the more body systems that are involved in an emergency, the more serious the emergency.

Body Systems

System	Major Structures	Primary Functions	Relationship with Other Body Systems
Respiratory System	Airway and lungs	Supplies the body with oxygen through breathing	Works with the circulatory system to provide oxygen to cells; is under the control of the nervous system
Circulatory System	Heart, blood, and blood vessels	Transports nutrients and oxygen to body cells and removes waste products	Works with the respiratory system to provide oxygen to cells; works with the urinary and digestive systems to remove waste products; helps give skin its colour; is under the control of the nervous system
Lymphatic System	Lymph, lymph nodes	Removes excess fluid (lymph) from body tissues; absorbs fatty acids and transports fat to the circulatory system; transports white blood cells around the body and initiates the formation of antibodies	Works to return fluid to the circulatory system
Nervous System	Brain, spinal cord, and nerves	Transmits messages to and from the brain	Regulates all body systems through a network of nerves
Musculo-skeletal System	Bones, ligaments, muscles, and tendons	Provides the body's framework; protects internal organs and other underlying structures; allows movement; produces heat; manufactures the components of blood	Provides protection to organs and structures of other body systems; muscle action is controlled by the nervous system

Body Systems

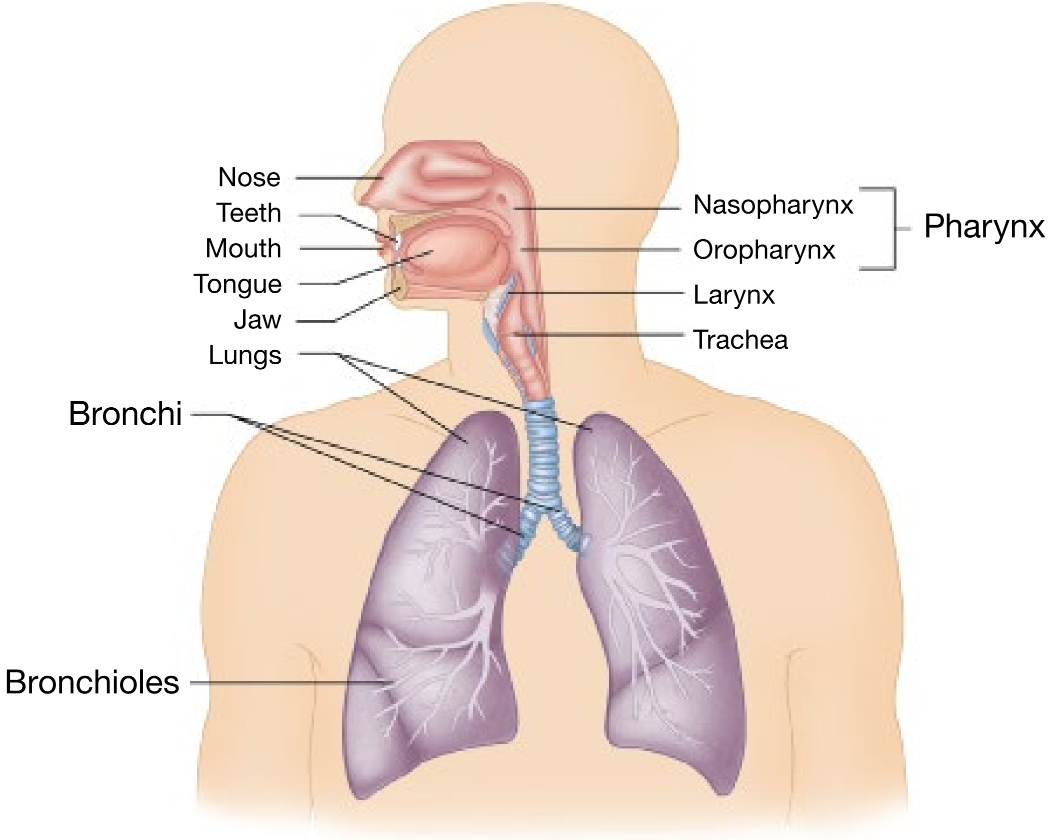
System	Major Structures	Primary Functions	Relationship with Other Body Systems
Integumentary System	Skin, hair, and nails	An important part of the body's communication network; helps prevent infection and dehydration; assists with temperature regulation; aids in production of certain vitamins	Helps protect the body from disease-producing organisms; together with the circulatory system, helps regulate body temperature; communicates sensation to the brain by way of the nerves
Endocrine System	Glands	Secretes hormones and other substances into blood and onto skin	Together with the nervous system, coordinates the activities of other systems
Digestive System	Mouth, esophagus, stomach, intestines	Breaks down food into a usable form to supply the body with nutrients and energy	Works with the circulatory system to transport nutrients to the body
Genitourinary System	Uterus and genitalia	Performs the processes of reproduction	Regulated through hormones produced by the endocrine system
	Kidneys, bladder	Removes wastes and regulates water balance	Receives waste from the circulatory system



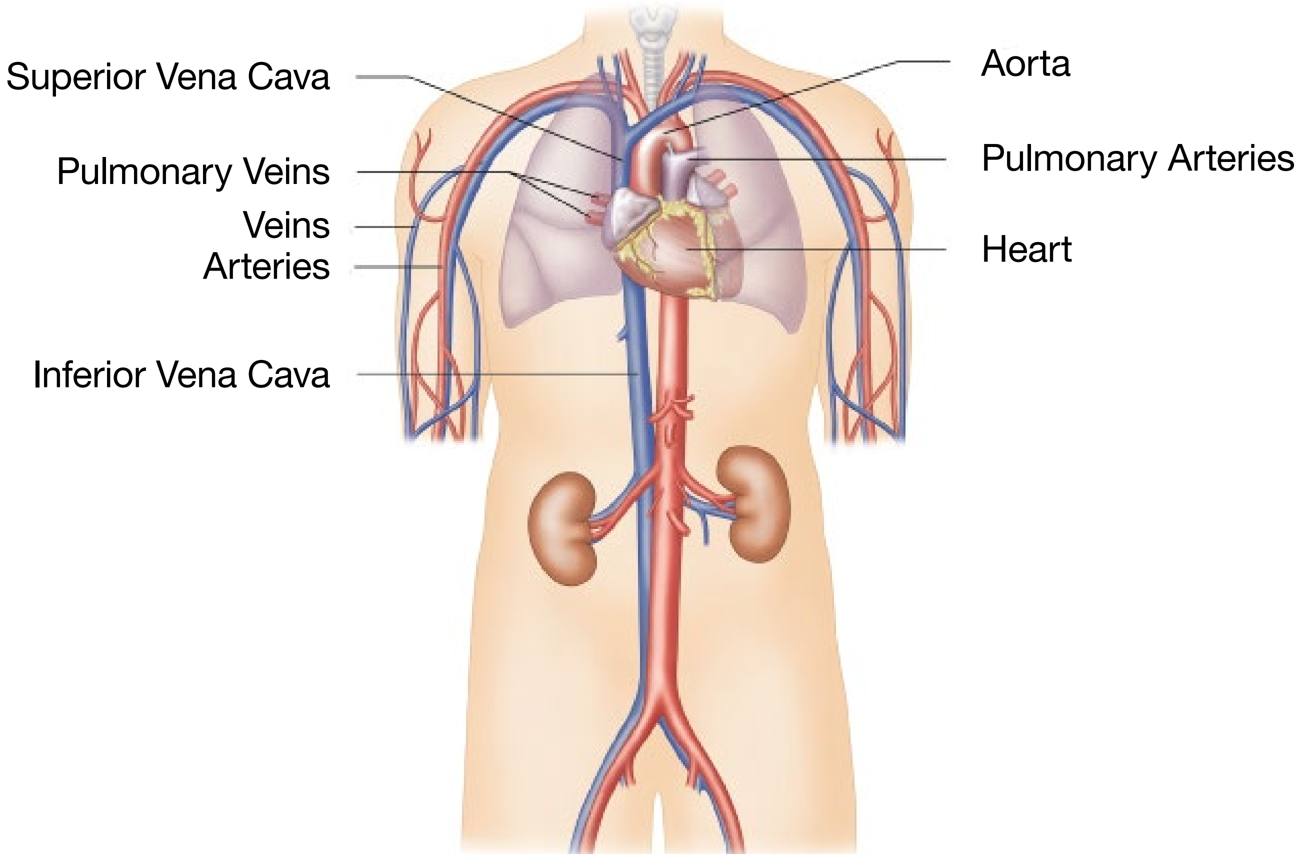
Front View

Back View

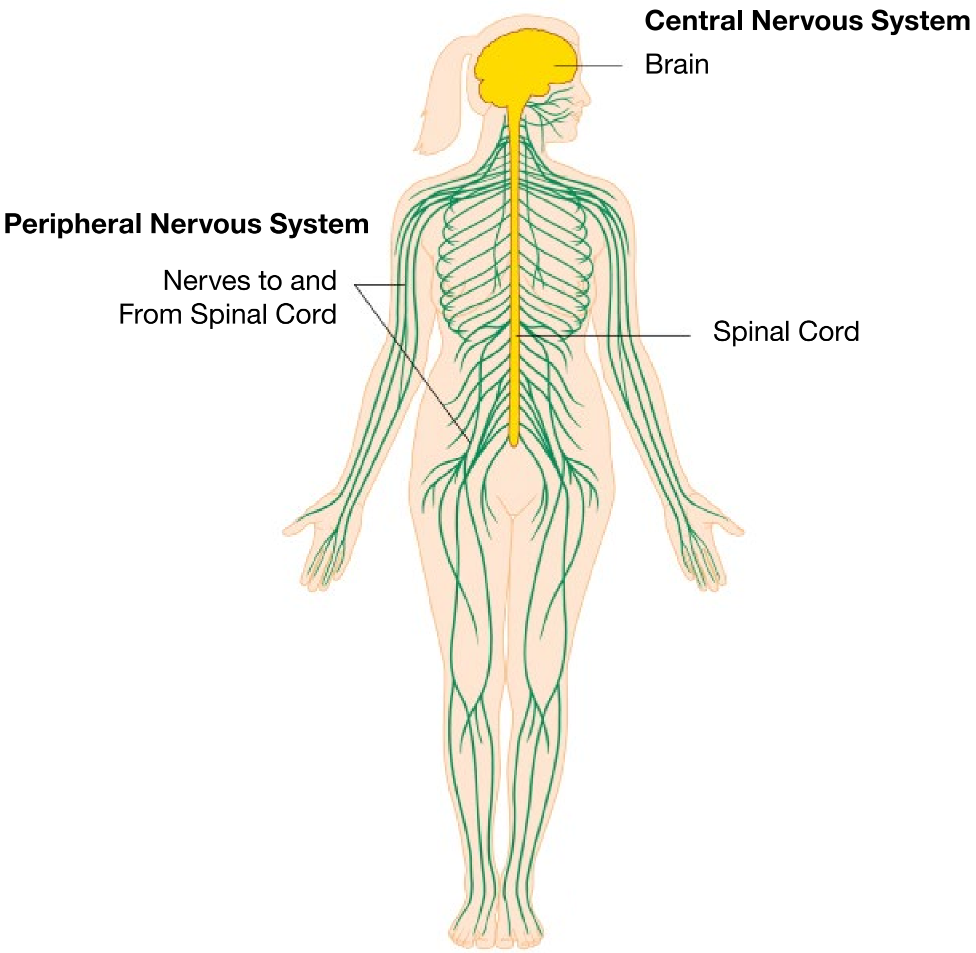
The Abdominal Quadrants



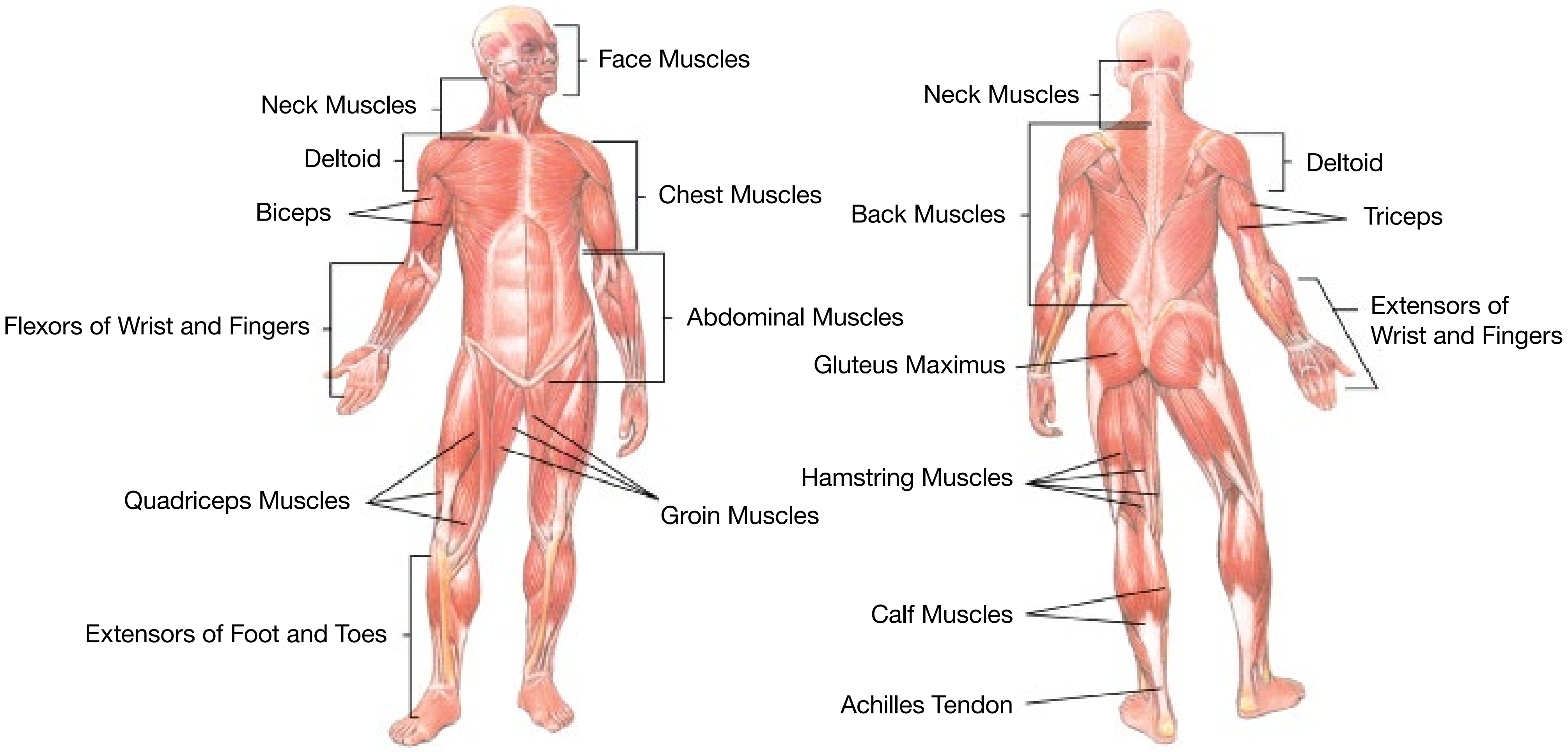
Respiratory System



Circulatory System

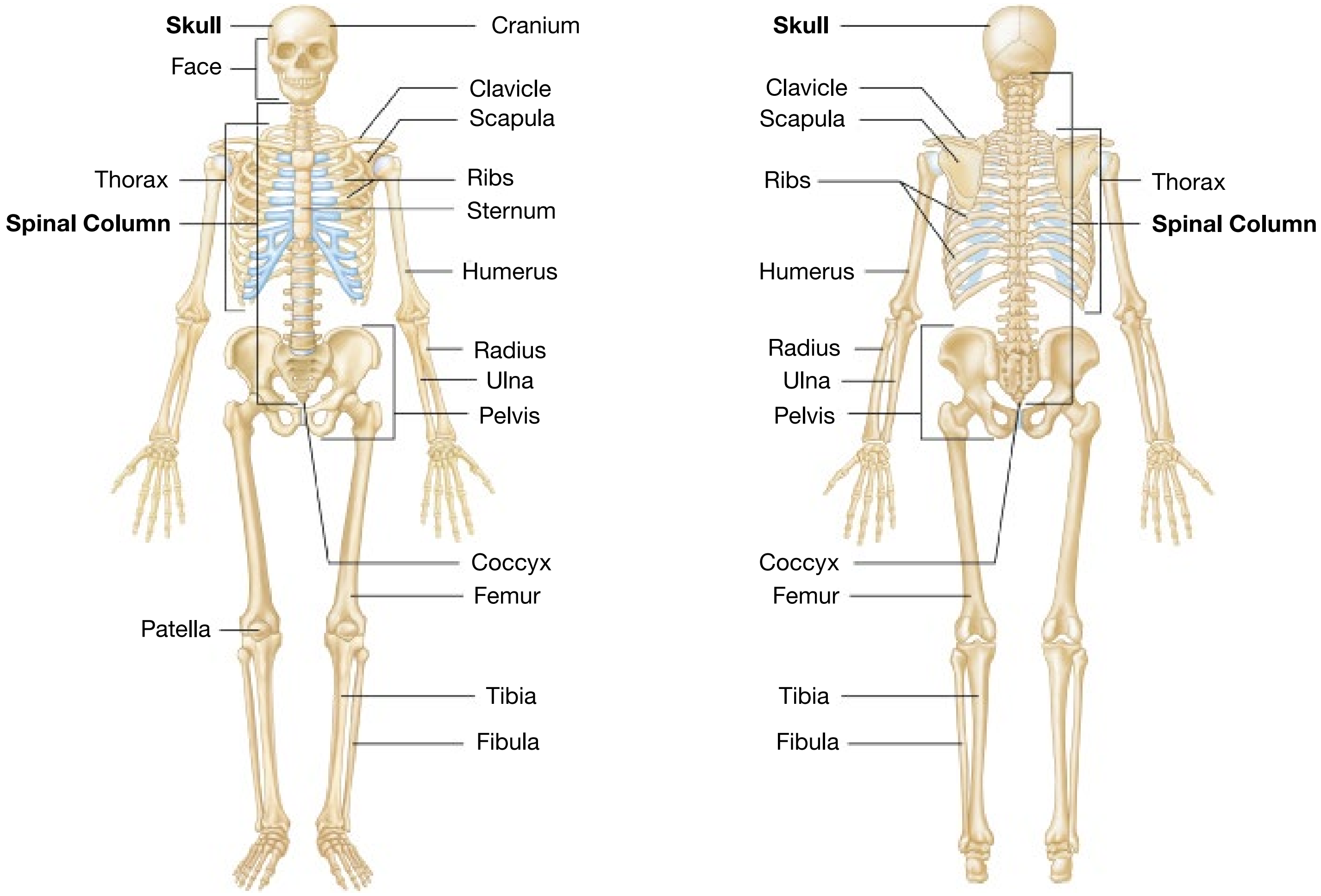

Central Nervous System
Brain
Peripheral Nervous System
Nerves to and From Spinal Cord
Spinal Cord

Nervous System



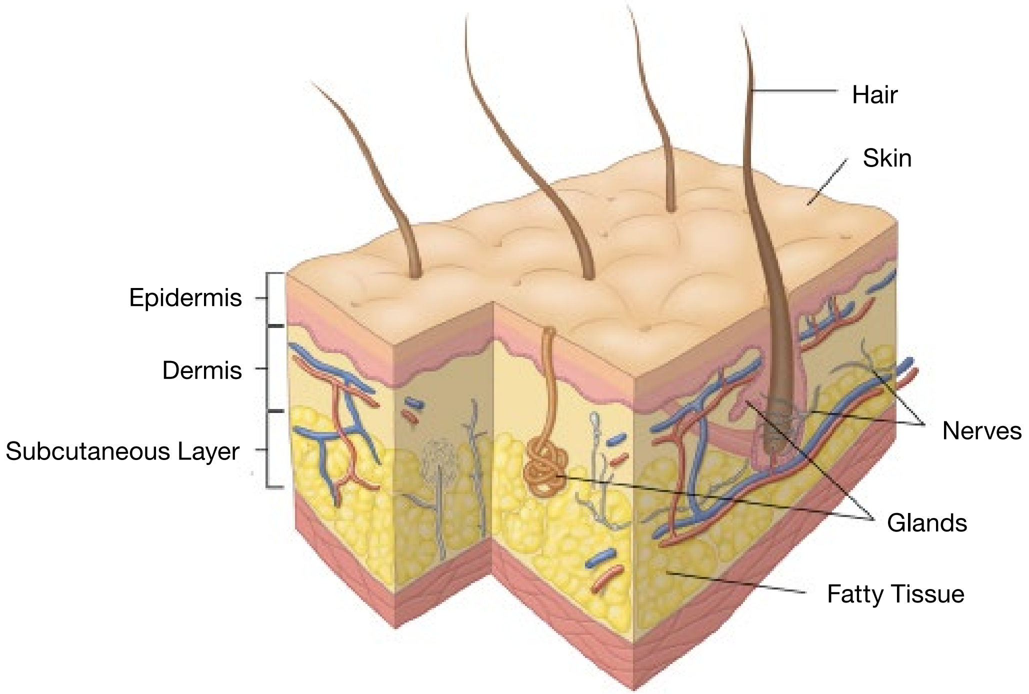
Musculoskeletal System

Muscles

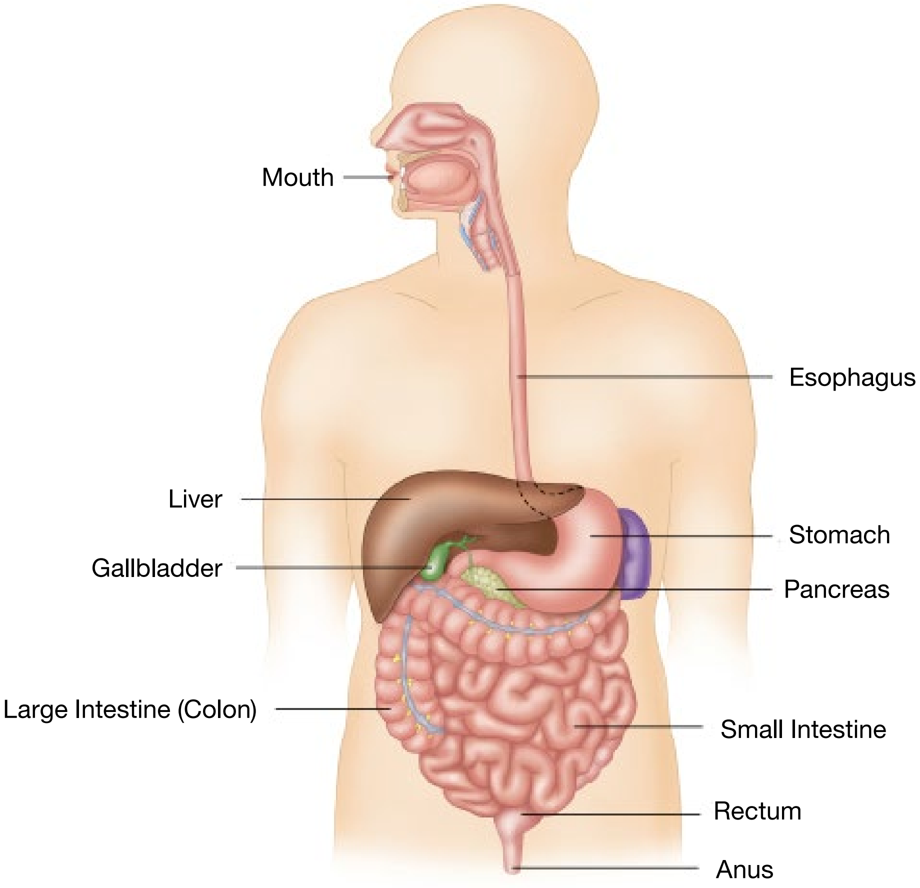


Musculoskeletal System

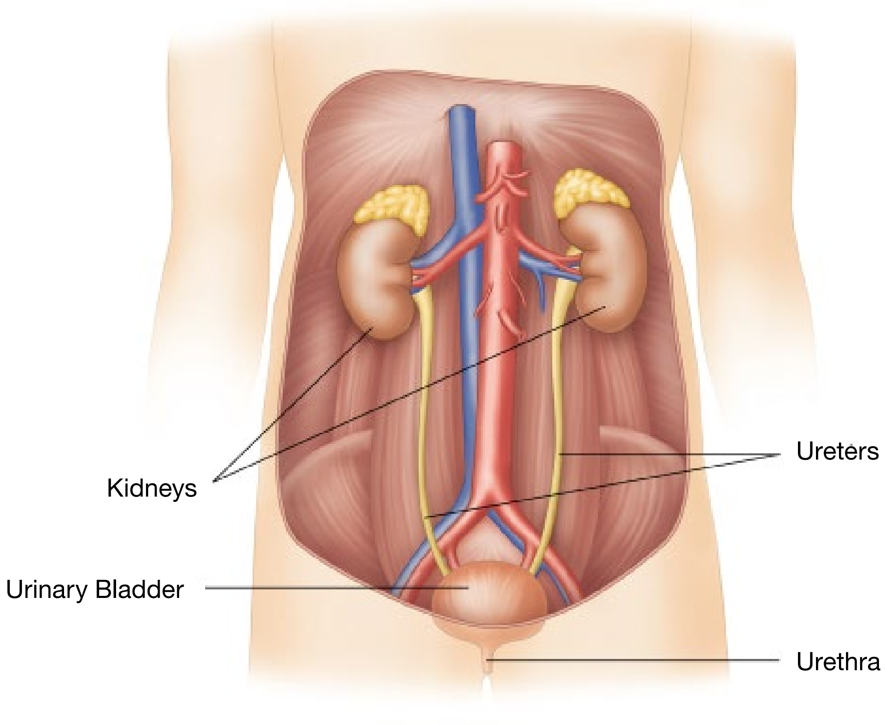
Skeleton



Integumentary System



Digestive System



Urinary System

Glossary

A

Abdomen: The part of the body below the chest and above the pelvis. It contains the stomach, intestines, liver, spleen, and other organs.

Abdominal thrusts: A method to remove a foreign object from the airway.

Administer (medication): To directly deliver medication for a person. For First Aiders, usually by putting it in their mouth, spraying it into their mouth or nose, or injecting it.

Airway: The pathway that allows air to travel from the mouth and nose to the lungs.

Airway obstruction: A blockage in the airway that stops air from reaching the lungs.

Allergic reaction: The body's response to a substance to which it is particularly sensitive. The response can be mild or very severe.

Ampule: A small, fully glass, sealed capsule that can hold a measured dose of liquid medication.

Anaphylaxis: A severe, life-threatening allergic reaction that occurs rapidly after exposure to an allergen such as food, insect stings, medication, or latex. It can affect multiple body systems and may cause difficulty breathing, swelling of the face or throat, hives, a drop in blood pressure, and loss of consciousness.

Anemia: A condition caused by a lack of red blood cells.

Arteries: Large blood vessels that carry oxygen-rich blood from the heart to the rest of the body.

Aspiration: Inhaling blood, vomit, saliva, or foreign material into the lungs.

Asthma: A chronic illness in which certain substances or conditions (triggers) cause inflammation and swelling of the bronchioles, making breathing difficult.

Automated external defibrillator (AED): An electronic device that analyzes the heart's electrical rhythm and, if necessary, tells the user to deliver a shock to a person in cardiac arrest.

B

Baby: A person under the age of 12 months.

Bandage: Material used to wrap or cover a part of the body or to hold a dressing or splint in place.

Breathing emergency: A situation in which breathing is so impaired that the person's life is in danger.

Bronchioles: Small tubes at the base of the lungs where oxygen and carbon dioxide are exchanged.

Burn: An injury caused by heat, chemicals, electricity, or radiation.

Bystander: Someone who is present at the scene of a situation or emergency (other than an ill or injured person).

C

Cardiac arrest: A condition in which the heart has stopped beating or beats too irregularly or too weakly to pump blood effectively.

Cardiogenic shock: A type of shock that happens with heart damage.

Cardiopulmonary resuscitation (CPR): A first aid technique that combines rescue breaths and chest compressions for someone who has stopped breathing and whose heart has stopped beating.

Cardiovascular disease: Any disease of the heart and blood vessels (also called heart disease).

Caustic: Capable of causing chemical burns.

Child: A person between 1 year old and the onset of puberty.

Choking: A condition in which someone's airway is partly or completely blocked by a foreign object, swelling of the mouth or throat, or fluids such as vomit.

Cholesterol: A fatty substance that can cause build-up on artery walls, making the arteries narrower and restricting blood flow.

Chronic Obstructive Pulmonary Disease (COPD): A condition of the airways that causes a loss of lung function.

Compression: Rhythmic pressure that is put on the chest to dislodge something blocking the airway or to circulate blood when the heart isn't beating effectively.

Concussion: A temporary impairment of brain function, usually caused by a blow to the head.

D

Defibrillation: An electric shock that is given to correct a life-threatening heart rhythm.

Diabetes: A chronic medical condition in which the body is unable to properly regulate blood glucose (sugar) levels. This can occur because the body does not produce enough insulin or cannot effectively use insulin. Abnormal blood sugar levels can lead to symptoms such as confusion, dizziness, weakness, excessive thirst, or loss of consciousness and may require prompt first aid and medical attention.

Direct pressure: Pressure that is put on a wound to control bleeding.

Dislocation: An injury in which a bone is moved out of its normal position at a joint.

Dispatcher: The emergency medical services worker who answers the EMS/9-1-1 telephone number and decides which EMS personnel to send to the scene and who may give advice about first aid until EMS personnel arrive.

Distributive shock: A type of shock that happens with abnormal blood flow. Sub-types include septic shock, anaphylactic shock, and neurogenic shock.

Dressing: A pad placed directly over a wound to absorb blood and other body fluids and to prevent infection.

E

Emergency medical services (EMS) personnel: Trained and equipped people, including police, firefighters, and ambulance personnel, who are dispatched through a local emergency number to give emergency care to ill or injured people.

Environmental injury and illness: Conditions caused by exposure to environmental factors such as extreme heat or cold, sun, water, altitude, or hazardous surroundings. Examples include heat exhaustion, heat stroke, hypothermia, frostbite, and sunburn. These conditions can affect the body's ability to function normally and may become serious if not recognized and managed early.

Epinephrine: A drug that can be injected into the body to counteract a severe allergic reaction.

External bleeding: Bleeding from an open wound in the skin.

F

First Aider: A person with training who gives immediate care to someone who is ill or injured until more advanced care can be obtained.

Flash eye: A type of eye injury, similar to a sunburn, that can happen when a person's eyes are exposed to too much UV (ultraviolet) light.

Foreign object: Any item that enters the body from outside.

Fracture: A break, crack, or chip in bone tissue.

H

Hazard: "any source of potential damage, harm or adverse health effects on something or someone" (Canadian Centre for Occupational Health and Safety, 2024).

Hazard identification: The process of identifying potential hazards in a workplace.

Head-tilt/chin-lift: A technique for opening the airway in an unresponsive adult, child, or baby.

Heart attack: A sudden illness in which an artery that feeds the heart becomes blocked, stopping part of the heart from getting the oxygen-rich blood it needs.

Hyperthermia: A heat-related environmental illness that occurs when the body's core temperature rises above the normal range. Types include heat cramps, heat exhaustion, and heat stroke.

Hypothermia: A life-threatening condition that develops when the body's temperature drops too low, usually from being exposed to cold temperatures for too long.

Hypovolemic shock: A type of shock that happens with significant fluid loss (such as severe blood loss, burns, vomiting, or diarrhea).

I

Immobilize: To use a splint or other method to keep an injured body part from moving.

Internal bleeding: Bleeding that occurs inside the body.

J

Joint: The point where two or more bones are held together by ligaments that allow movement.

L

Legislation: Laws (often used to refer to a collection of laws about a specific activity, such as workplace first aid).

Ligament: A fibrous band that holds bones together at a joint.

M

Maritime Occupational Health and Safety Regulations (MOHS): A document in the Canada Labour Code that outlines laws specific to marine workplaces, including laws around first aid and medical care.

Medical identification product: A wallet card, bracelet, watch strap, anklet, or necklace with a tag indicating that the person wearing it has a particular medical condition.

N

Naloxone: A life-saving medication that temporarily reverses or blocks the effects of opioid poisoning on the central nervous system.

O

Obstructive shock: A type of shock that happens when a physical block does not allow the heart to fill or empty properly; also known as mechanical shock.

Occupational stress injury: A type of workplace injury related to the negative physical and emotional reactions that occur when job demands do not match the amount of control that an employee has to meet them (Canadian Centre for Occupational Health and Safety, 2024b).

Opioid: One of a group of drugs that bond with opioid receptors in the brain, slowing down the central nervous system.

Opioid poisoning: A type of poisoning that happens when amounts of opioids that are higher than prescribed interfere with the brain's signals to the body.

P

Pelvis: The part of the body between the abdomen and the legs. It contains the intestines, bladder, and reproductive organs.

Poison: Any substance that causes injury, illness, or death if it is inhaled, swallowed (ingested), absorbed, or injected.

Poison Centre: A centre staffed by medical professionals who can give information about first aid in cases of poisoning.

Primary assessment: An examination of an ill or injured person to determine his or her initial condition and whether there are any life-threatening concerns.

Pulse: The beat felt in arteries near the skin with each contraction of the heart.

R

Rapid transport criteria: Guidelines to identify injuries for which you must call EMS/9-1-1 and which must be transported by ambulance.

Recovery position: A position for an unresponsive person that helps to keep the airway open and allows any blood or vomit to drain from the person's mouth.

Respiratory arrest: A condition in which breathing has stopped or isn't effective.

Respiratory distress: A condition in which breathing is difficult.

Responsiveness: Awareness of the environment and ability to respond to stimuli.

Risk: A measure of how likely a hazard is to cause damage or harm.

Risk assessment: The process of identifying the risk levels of hazards in a workplace.

Risk factors: Conditions or behaviours that increase the chance that a person will develop a particular disease or suffer a particular injury.

S

Secondary assessment: A verbal, visual, and/or physical check of an ill or injured person for conditions that were not identified in the primary assessment.

Seizure: An episode of abnormal electrical signals in the brain that results in disturbed brain function, shaking or contraction of limbs, and/or an altered level of responsiveness.

Self-care management: The process of taking steps to manage the stress in your life.

Shock: A serious condition caused when the circulatory system cannot get enough oxygen-rich blood to all parts of the body. Causes include severe blood loss, allergic reactions, and emotional trauma.

Sign: An indicator of injury or illness that a First Aider can see, feel, smell, or hear.

Soft tissue: Skin, fat, muscles, and other soft body structures.

Splint: A device used to stop body parts from moving.

Sprain: The stretching or tearing of ligaments and other soft tissues at a joint.

Stigma/bias: A preconceived negative belief or attitude about a person or group of people, often based on stereotypes.

Strain: The stretching or tearing of muscles and tendons.

Stroke: A disruption of blood flow in the brain, causing weakness and/or speech problems.

Substance use and misuse: The consumption of substances such as alcohol, prescription medications, or drugs. Substance misuse occurs when these substances are used in a way that is harmful, unsafe, or not intended, including overuse, improper use of medications, or use of illicit drugs. Substance misuse can impair judgment, breathing, and consciousness and may lead to overdose or other medical emergencies requiring immediate first aid and emergency response.

Sudden Infant Death Syndrome (SIDS): The sudden death of an apparently healthy baby.

Symptom: An indicator of injury or illness that is felt and expressed by the ill or injured person.

Syringe: A device with a tube (barrel) and plunger that can suck up and eject liquids, often used with a needle to administer liquid medications.

T

Tendon: A fibrous band that attaches muscle to bone.

Tissue: A group of cells that work together to perform specific functions.

Trench foot: A lower limb injury that can happen when the affected area is exposed to cold water for a long time.

Tuberculosis (TB): A potentially fatal bacterial infection of the lungs that is spread through the air from one person to another. It can also affect the bones, brain, kidneys, and other organs. Treatment is complex and involves taking many different medications over an extended period of time.

U

Unresponsive: A state in which a person is unaware of the environment and does not react to stimuli.

V

Veins: Blood vessels that carry oxygen-poor blood from all parts of the body back to the heart.

Vertebrae: The 33 bones that make up the spine.

Vial: A small glass or plastic container with a cap that can hold a measured dose of liquid medication.

Vital signs: Three key characteristics of a person's condition (level of responsiveness, breathing, and skin).

W

Workplace: "any place where an employee is engaged in work for the employee's employer" (Canada Labour Code, 2024).

Workplace first aid attendant: A designated person trained to provide immediate care and support to employees who experience injuries or medical emergencies at work until professional medical help arrives.

Wound: An injury to soft tissues.

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